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California State Journal of Medicine

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MEDICAL SOCIETY OF THE STATE OF CALIFORNIA

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(SEE PAGE XI)

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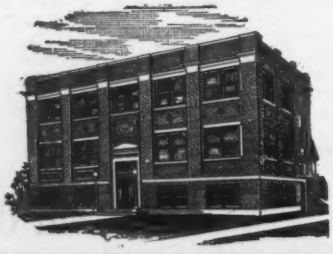

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See the Archives of Internal Medicine, September, 1915, Vol. XVI, pages 389-405 and June, 1916, Vol. XVII, Part I, pages 840-851, also The Journal of the American Medical Association, May 20, 1916, Vol. LXVI, pages 1594-1596.—Reprints of these papers will be furnished upon request.

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California State Journal of Medicine

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Contributors, subscribers and readers will find important information on the sixteenth advertising page following the reading matter.

VOL. XV OCTOBER, 1917 Number 10

At a meeting of the Council of the State Society on August 25, 1917, the resignation of Dr. Sol. Hyman, as editor of the Journal, was accepted. Dr. Alfred C. Reed was elected editor. Dr. J. Henry Barbat, president of the State Society, has reappointed Dr. Sol. Hyman a member of the Publication Committee.

THE CHALLENGING OBLIGATION.

Not to be blamed but pitied! Not to be despised but compassionated! Who can say whether ignorance or fear was his enemy?—or both, for they are so often joined. Perchance his deaf ear had not heard the ringing appeal for justice, liberty, international law and democracy. Perchance his blind eye had not observed the agonizing plight of Europe's helpless. And so, perchance, his sluggish brain had not conceived the idea that to his own door would stalk the fate of Europe, did he not rouse his ear, and eye and brain to look on facts as facts. For he was indifferent to the appeal, tried to avoid the direct issue, sought to evade the crisis.

He claimed to be a conscientious objector, as if that justified his conscienceless refusal to help the helpless, and to help make war an anachronism. Or he claimed his religion forbade him to fight. Strange his same religion should not forbid Europe's million children to suffer and die. Or he claimed his philosophy of life was too advanced and high to permit him to do this thing. Or he claimed he did not believe in war. Or he claimed some technical trumpery which should win him exemption and did not see that he gained exemption from honor, and obligation, and self-respect, and the regard of his fellow men. He claimed,—all these and more, when ignorance and fear, twin sisters of disaster, dwelt in his soul, and he would translate their whisperings into a conscience. He claimed,—what did he not claim? And in the white crucible of national peril and national challenge, his philosophy of life failed ignominiously, could not stand the test of just war's acid. He failed in the crisis; and he is to be pitied,—not blamed, compassionated,—not despised.

Fortunately he is not to any extent in the profession of medicine. Fortunately the doctor has girt himself with his old-time principles and his historic character of seeking whom he might save. Let there be no slacker. We dare have no slacker in *this* profession. It must lead and hold up the torch. *Our* philosophy has not failed and will not fail in this, civilization's greatest crisis in history. The challenging obligation of service comes to-day to the medical profession with the authority of an insistent demand. One out of five of us must go to the army. The rest of us, if our loyal support is tendered, will allow no consideration of personal advantage or gain to hinder the one ideal now uppermost. This war must be won. To that end let every doctor do his bit, whether at home or at the front.

"The basis of this demand is not patriotism in general, or militarism in any degree, but the very justice of the national cause, the supreme

importance of the issues at stake. Truth needs now not apologists, but defenders. Humanity needs not lip confessors, but champions. Civilization needs not expounders, but exponents. Internationalism needs practical builders who know the precise lay of the national foundations. The peace-makers who shall be called the children of God are none other than the stern, unsentimental, stout-hearted fighting men who now strive with might and main to build a lasting international peace, who are the exponents of civilization where it is threatened, the champions of humanity, the defenders of truth." [1]

THE MAINTENANCE OF INDEMNITY DEFENSE FUND.

The initial assessment for the organization of the Indemnity Defense Fund was fixed at $30.00, one-half to be paid in cash upon subscription, and the balance by note due one year thereafter. In fairness to those who joined the Fund promptly, it was necessary to fix a limit upon this method of payment, and therefore December 31, 1917, was settled upon as the last maturity date for notes covering the deferred payment. In other words, a member joining the Fund at any time subsequent to January 1, 1917, paid $15.00 in cash and the maturity date of the note given by him was December 31, 1917, no matter at what date he came in, and, of course, this rule obtains for all members joining at any time up to December 31, 1917.

Commencing January 1, 1918, the Council has decided that the full initial assessment of $30.00 be paid in cash. This ruling is, of course, dictated by the interests of those who have been prompt in becoming Contributing Members.

Despite what has been said and written upon the subject we are still in receipt of many inquiries on the subject of assessments, and particularly as to whether or not these assessments will be levied regularly each year. This is not the intention, nor the design of the Fund. The amount of the assessments and the frequency with which they will be levied depends entirely upon the successful assertion of claims against the Contributing Members. Taking as a standard the experience of our Legal Department for the past eight years it may be conservatively said that these assessments should not in any event exceed $10.00 per annum, and the greater the number of our members who join the Fund, the lower will be the amount of these assessments. We do not mean to give the idea that there will necessarily be an assessment of $10.00 each year. It may not be necessary to levy any assesment, and we trust it will not, for at least two or three years. The idea we are seeking to convey is that assessments will only be levied as necessity for replenishing the Fund arises, and that the experience we have had shows that an assessment of $10.00 per annum would be the maximum figure.

It must be borne in mind, however, that in considering propositions of this character the law of averages plays a large part. Therefore, it is extremely desirable that as large a membership as possible be obtained for the Fund.

It is so patently to the interest of each member of the Society to join the Fund that it seems ridiculous to do so much talking about it. Members accused of malpractice always turn to the Society for protection, advice and comfort. Our records show that the organization has never failed them, but the ordinary legal defense does not protect against adverse final judgments. A member insured in a private company nevertheless looks to the Society first. If he were a Contributing Member he would secure the active co-operation and assistance of our Legal Department as well as that of his insurance company. If he be not insured, it is certainly to his interest to secure the protection afforded by the Fund.

There is nothing technical, involved, or complicated in the organization of the Indemnity Defense Fund. The Coverage Rules are a plain statement of the fundamental principles necessitated for the protection of the individual and the entire organization. The regulations governing the administration of the Fund are based upon fundamentals used by all trust companies, and the board of trustees handling the Fund is composed of men whose judgment in matters of finance is most sound and conservative.

Ask your County Secretary about the Fund, or write to the Secretary of the Society.

THE ALCOHOL QUESTION.

IV. ECONOMIC CONSIDERATION.

From the economic point of view, is the use of alcoholic beverages an asset or a debit? Does alcohol have any influence on the economic condition of the employer or of the employee? Two methods of approach are available in this consideration. In the first method, data have already been presented in this series [1] showing the physiological action of alcohol and its deleterious influence on public and private health. It is unnecessary here to repeat these statements, or others to the same intent. They are demonstrable and must be accepted. The action of alcohol thus described leads certainly to definite economic results. These results appear in a variety of forms. Among them may be noted increase of industrial accidents, interference with efficiency and productivity, increase of sickness, loss of wages, unemployment, contribution to the maintenance of the vicious circle of poverty, crime, vice and alcoholism. These are matters of very pertinent economic concern, and to ignore them does not remove them.

The second method of consideration is from the standpoint of productive business, concerned at its best with three things, return on invested capital, a living wage for labor, and efficient service to the clientele served. In a paper before the National Conference of Charities and Corrections in Indianapolis, Alexander Fleisher [2] discusses the attitude of large employers toward the use of

[1] Survey, Aug. 18, 1917.

[1] Cal. State J. Med., 1917, XV, July, Aug., Sept. Edits.
[2] Mo. Bull. N. Y. C. Dep't of Health, 1916, VI, 159.

alcohol by employees. He notes that only two preceding reports are available in this field. The first of these was a chapter in the twelfth annual report of the Commissioner of Labor for the year 1897-8 on the economic aspects of the liquor problem. Of 6976 employers of about one and three-fourths millions of people, 5363 reported the use of alcohol was considered in the engagement of new employees. In some of these establishments, no user of alcoholic beverages was employed. Out of 1794 plants, for the sake of prevention of accidents and because of responsibility of the position, alcohol was barred. Of 7025 firms, 3527 had some regulation regarding alcohol: 855 forbade its use in working hours: 696 forbade its use at any time: 692 that in certain occupations its use was forbidden on duty, and in certain occupations 1,284 forbade its use at any time.

The second study noted by Fleisher was made within the year by the Temperance Society of the Episcopal Church, among the iron and steel companies of Ohio, Pennsylvania, Illinois and West Virginia. The data covered 140 companies, many with more than one plant. Of the 120 companies answering, 83 discriminated against the use of alcohol in employing and promoting employees, and ten forbade its use by employees at any time. The first study was conducted twenty years ago and the second covered a section of one industry only.

Fleisher received data from ten railroads employing a total of 400,000 men, all of which regulate the use of alcohol in some fashion, and typically according to this notice: "The use of intoxicants by employees subject to call is prohibited. Their use by any employee or the frequenting of places where they are sold, is sufficient cause for dismissal." It is interesting here to note that the Saxon State Railways have instructed their officials to employ only non-drinkers. Swiss and Dutch railways are following in the same path. Says the Railroad Gazette, "American railroads have become one of the greatest and most effective temperance organizations in existence." Six public service corporations employing a total of 200,000 men seemed not to have taken the matter up for definite pronouncement but the conclusion is drawn that intoxication on duty would meet with dismissal, that use of alcohol is forbidden in working hours, and that if its use interferes with the duties of an employee he would be dismissed.

Returns from large department stores, retail stores and mail order houses employing in all some 44,000 persons, show that in general drinkers are not allowed to remain in their employ. So the list goes on through the employees of sales organizations, steel companies, mining companies, manufacturers of various products, and a miscellaneous group of minor industries. Fleisher summarizes his results of the investigation of the employers of 750,000 persons, constituting 4 per cent. of those engaged in trade, transportation, and the mechanical and manufacturing industries of the United States, by stating that these employers forbid alcohol in their plants, often consider its use at all as of serious importance in the employment and promotion of employees, and that in such industries as transportation, alcohol is forbidden to employees at any time. This latter stand is being approached by other lines of industry.

Fleisher further points out that this great trend against the use of alcohol is a result, not of any knowledge of its physiological action or of statistics as to its use, but simply of the fact that the non-drinker is found to be the best employee. Space forbids mention of the increasing number of trade organizations both among employers and employees which are opposed to the use of alcohol, on the basis of its proved results from the economic standpoint.

An exhaustive discussion is not possible because of space limits. The importance of the subject, however, merits profound thought from every physician as to the actual conditions obtaining in the economic realm as affected by alcohol. Nor should undue weight be put on the alleged freedom of the individual to select whatever narcotic he desires. When that selection leads to conflict with public and private health interests, to interference with full war efficiency, to economic damage to the country, and to the whole train of post-alcoholic evils which are at last being correctly evaluated, it should no more be permitted than should the freedom of the individual to debauch himself with cocaine. Of the two, alcohol bulks larger and the remedy should be at least as sweeping.

NEW MEDICAL PRACTICE LAW.

The new amendments to the state medical practice law went into effect on July 27, 1917. Two provisions require special comment. The first is relative to the employment of interpreters or translators for candidates for medical examination. The law provides that "the board (of medical examiners) in its discretion upon the submission of satisfactory proof from the applicant that he is unable to meet the requirements of the examination in the English language, may allow the use of an interpreter either to be present in the examination room or to thereafter interpret and transcribe the answers of the applicant." The interpreter is to be selected by the board.

In another column are published the rules adopted by the board under this provision. These rules would seem adequately to cover the situation, granting, of course, that the use of interpreters is desirable under any circumstances, of which we are by no means convinced.

The second provision requiring comment is in connection with Section 12½ of the amendments appertaining to the licensing of osteopaths as "physicians and surgeons," provided they meet certain preliminary requirements, or have practiced their profession for at least four years, and pass an examination which may be "oral, practical or clinical." The important word is the "or." It is not known to us why the law does not provide for an examination which should be "oral, practical *and* clinical." The result as it stands, is that a purely

perfunctory oral examination may be sufficient to secure a physicians' and surgeons' license for osteopaths who are otherwise eligible.

The first examination of osteopaths under this new provision will be held in Los Angeles early in October. The medical profession of the state will be keenly interested to see what type of examination is given and whether the Board of Medical Examiners allows the language of the law as heretofore stated to prove a loop-hole. The JOURNAL will publish the results of the examination and other information concerning it as it is realized that this is of no small interest and importance to the medical profession of the entire state. The Board of Medical Examiners is commissioned with the onerous and responsible duty of maintaining and promoting the standard of medical practice in the state. To that end they have the cordial interest and should merit the constant support of the medical profession. It is to be hoped that this coming examination will set another high standard, and will establish a clear policy of adequate and thorough examination. We shall have more to say at a later time regarding the character of efficient medical examinations.

ACCEPTANCE OF ORIGINAL ARTICLES.

All papers read before the State Society are the property of the State Medical Journal, unless by action of the Publication Committee they are not found available for publication. The Publication Committee may reject any paper submitted, whether it be from a State Society meeting, a county society meeting, or written solely for publication. The editor may accept any paper he sees fit but can not reject, this latter being a function of the Committee. It is greatly to be hoped that no paper will be allowed to be presented at the State Society meeting at Del Monte next April, unless the original copy of it is already in the hands of the secretary of the section before which it is read. Many state papers from the last meeting have not yet been submitted for publication. No special effort will be made this year to gather in the missing papers because of the unduly crowded space in the JOURNAL. In this connection, it is hoped that the larger size of the JOURNAL may be continued long enough to relieve the congestion and eventually become permanent.

In another column will be found a notice from the Committee on Scientific Work making certain suggestions for the preparation of papers for the next annual meeting. These suggestions are good and timely, and the Committee will do well to present the matter again and at more length. The same suggestions to a certain extent are applicable to all papers presented for publication in the JOURNAL. While it is not the policy of the Publication Committee to make the JOURNAL ultra-scientific, or to insist on a preference for research and new results in manuscripts submitted, still it is felt that the JOURNAL space is too valuable to be devoted to mere text book descriptions which can be better read in a standard volume.

Papers should be condensed by leaving out every word, phrase and paragraph which does not contribute constructively to the argument developed. Every sentence must be clear and express a definite idea. Spelling and punctuation must receive proper attention. Typing, margins, double spacing, paragraphing,—all must be clear and carefully worked over before submitting. The cardinal sin of the medical writer is verbosity. Avoid it. Many excellent papers have been returned for slight alteration or modification which would considerably enhance their value and would insure their acceptance for publication. All references should be numbered serially through the paper, and give only,—author, journal, year, volume, page. Above all, the medical writer should clothe his argument, as Thomas Hobbes advised, in "perspicuous words by exact definition first purged and snuffed from ambiguity."

The scope of papers accepted is broad and is designed to furnish practical instruction to the general practitioner, especially in smaller towns, as well as to men specializing in cities.

THE UNHYGIENIC COLON.

The physiological and bacteriological storms which have raged of late years about the colon would of themselves give importance to that organ even if the first reflection did not show conclusively that there is some occasion for regarding it as Kellogg, in the preface of his book on "Colon Hygiene," says: "An incubating chamber of poison forming germs, a hold of unclean and hateful parasites, a veritable Pandora's box of disease and degeneracy." From absolute ablation as a panacea, to a complete disregard of the organ unless it shall not have emptied itself in a week or more, there is a whole range of phenomena which may appear as symptoms and of remedial agents which may be used with effective results.

It is worth while for the physician to remember that the colon is not unhygienic merely because of the presence of bacteria. It is becoming known that processes of digestion depend, to an as yet unknown degree, on the action of bacterial enzymes directly on foods. Metchnikoff's endeavor to replace the abnormal bacterial inhabitants of the colon with beneficent organisms is in line with the present trend of investigation.

But while bacteria are a necessary factor in the physiology of the colon, they are also the cause of abnormal conditions through products which may cause, or predispose to disease. Here is the place filled with fads and fancies, some scientific and more pure fancy. All of the internal baths, and colon irrigators on the market today but voice this truth. A half assimilated idea is often worse than none at all, and a pseudo-scientific sensational exploitation of the idea that the colon must be cleansed at any cost, and that this can actually be done, is usually an accompaniment simply of a commercial desire to trade on the authority of science for money making purposes.

There is a legitimate field for colon hygiene, however, and this too must not be forgotten by the practitioner. Kellogg discusses in general from a

rational standpoint what is a proper care of the colon and how to regulate its activities by the use of diet and enema. Constipation is not the source of all human ills, although a great many do seem to have their origin there. It behooves us, therefore, to follow the old maxim of Horace, a wise guide by the way, in all therapeutic procedure. "Not too far out to sea, Licinius, nor yet too near the shore." There is a safe and middle course, and in the hygiene and treatment of the colon such is the course of choice. Even Kellogg is prone to exalt the colon above all other gods as a *fons et origo* of disease, but withal he has some sane and practical ideas which are worthy of commendation.

MALARIA IN RICE FIELDS.

Serious attention of the medical profession, particularly those who reside in the San Joaquin and Sacramento Valleys, is called to the article of Mr. Freeborn in this issue of the JOURNAL on "The Malaria Problem in the Rice Fields." Mr. Freeborn's active association with Professor Herms of the University of California, to whose earnest efforts extended over many years, the present interest in malaria in California may be considered due, and Mr. Freeborn's participation in the general mosquito survey of the California State Board of Health during the past summer makes him peculiarly well fitted to write this most interesting article.

The importance of the relation of malaria to agriculture, particularly rice-growing, is impossible to estimate. Likewise the damage malaria can do with its presence among the agricultural neighborhoods cannot be estimated. The dissemination of information as to the prophylaxis of malaria by Professor Herms, Mr. Freeborn and the California State Board of Health means a great deal to the rice-growing communities because malaria can be made a negligible factor with relatively small cost.

The work of Kelly and Geiger on the determination of the malarial endemic index in certain communities in California, a work not finished, has yielded most interesting data. Organization of efforts in other communities and lands with a compilation of the comparative results obtained makes plain the following facts:

First—Malaria is the result of an animal parasite, easily demonstrable in and capable of reproduction in the blood of the host.

Second—Malaria is transmitted by certain species of the anopholes mosquitoes.

Third—Quinine properly used will cure cases of malaria.

Fourth—Quinine in small amounts, such as five grains, used daily during and after exposure will prevent malaria.

This last measure should be employed because of the experience of the Italian government in its efforts to control malaria. The good results obtained, notwithstanding intensive mosquito control, being due to quinine prophylaxis.

EDITORIAL COMMENT.

Under the heading of Notices there appears in this issue a list of the A. M. A. publications concerning nostrums and quackery. The list includes much spicy reading and much that is disgraceful to any modern civilized country. The mere repetition of it all is nauseous, yet the public, including the doctors, must know what is going on, and without publication, this cannot be. Therefore the publication. No other reason would justify it. And still in spite of the publication of these and similar exposés, the newspapers of California reek of nostrums, many of them of proved worthlessness, and smell to high heaven with the stench of abortionists, and beauty doctors (save the name!) and quacks of the most brazen sort. If the people really want such muck, are they entitled to get it? And again, do they want it? Would it pay to have a California newspaper free from such advertising? Would it be good business for commercial bodies to purge the press at least in part of such advertisements? Would there be any possible effect on strangers and prospective tourists and investors? We think there would. Think it over, and decide if such be the case, why the physicians of each town and city should not take the lead in purifying the public press of the state of nostrum, quack, charlatan and plain abortionist advertising.

In connection with the preceding paragraph, the following circumstance gives further food for thought. Recently in one of the supposed best drug stores in San Francisco, was to be had gratis a small pamphlet entitled "Dr. Humphrey's Manual," whereby the enterprising reader was informed that he could diagnose and treat most of his own ailments with complete satisfaction to Dr. Humphrey. In this small volume is a complete epitome of medical art and practice. No longer suffer from stomach-ache but take some of number 23 and be cured! If you are a victim of "Glycosuria Albuminuria" with "a red fissured tongue and enlarged papilla, voracious appetite and sinking of the stomach," take "a Special, in fluid, with directions," for one dollar per bottle. It is a wonderful new system of home-dosed therapeutics, where instead of calling on the doctor, it is only necessary to call off a football signal, such as 27, 31, 19, 11, and presto! the disease is treated and cured. Or perhaps, it is like a game of craps, and the fall of the dice tells the combination required for treatment. What are we to think of the drug stores which promote such advertising? Are there any drug stores which do not, at least to some extent, distribute cheap medical literature, so-called, for the purpose of increasing sales of nostrums and patent medicines, by means of stimulating amateur diagnosis? The home diagnosis and treatment of disease is among the oldest and newest of indoor sports and by it the undertaker thrives and the nostrum-monger waxes fat and opulent. Of all this more, much more, anon.

The open season for typhoid has not closed. But it is to be remembered that typhoid can be prevented, and that every case of it means simply ignorance either on the part of the patient or

often of his physician. In neither case, at least in California, is such ignorance excusable. The sure means of prevention is known. The victim of typhoid, therefore, does not deserve sympathy and should never receive monetary compensation. He is always merely the victim of some one's carelessness or ignorance. The bill should be assessed against that person who was culpably careless or ignorant. The State Board of Health will supply typhoid vaccine to any physician free on application. Why not take advantage of the offer? Ignorance and dirty fingers are at the root of most cases of typhoid. How easy to remedy these, and to use the known specific protection.

We want news. If you have no county editor as yet, elect him at once. The collection of news depends on the various county editors primarily. We want especially matters of professional interest, such as details of new hospitals, new equipment and clinical features of hospitals and institutions, matters of public health interest, and all from country districts as well as from cities. We want jokes,—of a medical nature especially, clippings from the medical and lay press which may amuse a weary brother in need of refreshment, and any items of local interest or from local publications which might be of interest to other doctors. Also we want letters of criticism, disagreement, advice, and any other matter which is disturbing a medical mind. The columns of the JOURNAL are open to any communication which the legal counsel for the society will pass. It is your JOURNAL. It is up to you to make it interesting.

Attention is directed to a letter under the head of "Correspondence," from the advertising committee of the JOURNAL, relative to the automobile coupon which is published again this month in the advertising section. The matter is one of importance because by this simple means, i. e., by filling out and mailing the coupon, each doctor can be of material service in the business administration of the JOURNAL. It is not a time-consuming operation to mail the coupon. Please do so at once, and let us have this as another instance of general support of the interests of the JOURNAL.

Do not miss the jokes in the advertising pages.

SPECIAL ARTICLES

THE BASIS FOR MEDICAL EXAMINATION IN THE ARMY.

Perhaps it were well at this time, when the decision of rejection or acceptance of drafted men rests in the hands of civilian doctors, to shed some light on what the physical requirements of examination of recruits for service in the army really are.

It is much to be desired that the Exemption Board exercise the same care in the selection from the drafted material as would the recruiting officer in the service. Noticeably physical defects eliminating the man as a candidate are readily discernable. Amongst these might be classed:

Impediment in speech; stabismus, convergent or divergent; loss of eye; total loss of either thumb; entire loss of any finger except the little finger; prominent flexion of one or more fingers; adherent or united fingers; lack of freedom in movement of joints; deviation from prescribed standard of physical proportions; scars of hideous disfiguring proportions; defective teeth; loss of ear; a loss of material of the ear, causing disfigurement; purulent otitis or diseases of the mastoid cells; a deviation of the septum of the nose or any contraction of the nasal orifice interfering with respiration; a lack of legal, moral or intellectual qualifications.

In the visual examination, which is to be made before the physical examination of other organs—as it is here that the greater number of disqualifications are found—a few of the excluding conditions might be noted: Complete or exclusive destruction of the lids; marked inversion or eversion on lids; ptosis; trichiasis; chronic conjunctivitis; trachoma; chronic keratitis; deep ulcers of the cornea; staphyloma; glaucoma; irregularities of the iris, and anterior or posterior synechiae reducing the visual acuity below the accepted standards. These are here given:

EYE TEST

Branch of Service	Right	Left
Line of Army	20/40 or some of 20/30	20/100
Signal Dept.	20/40	20/100
Medical Dept.	20/70 correctible to 20/40	Same as rgt.
Ordnance Dept.	20/70 correctible to 20/40	Same as rgt.
Medical Corps Medical Officers' Reserve Corps	20/100 correctible to 20/20 No. 1 Jaeger 50 D Sn 13-20" No color blindness or strabismus	Same as rgt.

ORGANIC DISEASE MUST BE EXCLUDED IN ALL CASES.

Following the visual examination the physician has the candidate strip, and here are noted the existence of evidence of drug habit; previous venereal diseases; pronounced hernia; obscene tattooing; marked deviations of the true spinal curvature; varicose veins; corns; bunions; hammer toes; interfering with locomotion; flat foot; where candidate is unable to stand the test of raising on the toe and qualifying, the hopping exercise; loss of the great toe or two toes on the same foot; hypospadias and epispadias disqualify.

Amongst the skin troubles are classed eczema; elephantiasis; chronic impetigo; extensive psoriasis; lupus and sycosis; extensive disfiguring naevi and other erectile tumors.

In the examination of the heart, marked hypertrophy and all valvular diseases; pronounced tachycardia and marked arrhythmia of the heart's action disqualify. Evidence of tuberculosis; chronic bronchitis; pulmonary emphysema; asthma; chronic pleurisy disbar. Chronic malarial poisoning marked

Height	Weight	Expiration	Mobility	Min. Weight	Service	Min. Height	Max. Height	Min. Weight	Max. Weight
61	110								
62	114								
63	118								
64	128	32	2	120	Infantry	64	—	120	190
65	130	32	2	122	Coast Aty.	64	—	120	190
66	132	32½	2	124	Engineers	64	—	120	190
67	134	33	2	126	Signal C.	64	—	120	190
68	141	33¼	2½	129	Q't'master	64	—	120	—
69	148	33½	2½	133	Cavalry	64	70	120	165
70	155	34	2½	135	Field Aty.	64	72	120	190
71	162	34¼	2½	142	Mtn. Bat'ry.	68	—	129	—
72	169	34¾	3	149	Aviation				
73	176	35¼	3	156					

Marked disproportion of weight over height is not a cause for rejection, unless applicant is positively obese.

by cachexia; grave anemia; syphilis; gonorrhea; chancroids, single and multiple; complete phimosis; chronic orchitis or epididymitis are disqualifying conditions; rupture through the scars or walls following abdominal operation; an extremely relaxed condition of the inguinal ring disbars.

To more easily understand the demands of the relative proportions of weight and height, the following table is given. A misunderstanding seems to exist with regard to the new ruling of the minimum weight permitted, i. e., 110 lbs. The table will readily set at rest all doubts with regard to the minimum weight permitted in the army:

Where doubt exists in cases of flat foot differentiation of the low arch, which is not a disqualifying trait, from the true flat foot, the decision may be reached by having the candidate stand on a talcum powder covered board and then step aside or walk across a clean area, which would show the true imprint of the foot.

By excluding drafted men possessed of one or more of these disqualifications much trouble would be saved and the unnecessary loss of time taken up in mobilization when the accepted man would undergo the Military Surgeon's inspection and examination and some overlooked disqualifying condition found. If such a state of affairs be accomplished as to mitigate this condition the object of this article will have been achieved.

RECRUITING OBSERVATIONS.*

By JAY JACOBS, M. D., San Francisco, and W. D. HORNER, M. D., San Francisco, Assistant Surgeons, U. S. Naval Reserve Force, Headquarters 12th Naval District, Sheldon Building, San Francisco.

The following observations are taken from the records of 3,460 men examined in San Francisco, California, for the United States Naval Reserve Force.

All of the applicants were subjected to the same physical examination regardless of rating or duties to be performed.

Of the above number, 833 or 24%, were rejected for various causes.

The percentage of rejections in this series is lower than the figures given by Gatewood in his "Naval Hygiene," who states that of 81,442 applicants examined during 1908, 29,910, or 36%, were rejected for physical disability. However, 26,242 more were rejected for causes other than declared physical disability, so the final percentage of rejections must be given as 67% or approximately two out of every three applicants in that series.

Contrary to the opinion of many people, physical requirements in the Navy have not been appreciably lowered since the outbreak of the war.

The various causes of rejection as we observed them, together with their percentages may be of interest to others and are submitted by the following table in their predominating order:

* By permission of the Department.

CAUSES OF REJECTION

Cause	Number	Percentage of total rejected	Percentage of total examined
Defective vision	215	25.8	6.2
Underweight	144	17.1	4.1
Systolic murmur heard over mitral area	81	9.7	2.3
Varicocele	58	6.75	1.7
Defective teeth	54	6.5	1.5
Color blindness	51	6.1	1.4
Flat feet	46	5.5	1.3
Diseased tonsils	34	4.0	.9
Tuberculosis lungs (suspect)	34	4.0	.9
Inguinal hernia	26	3.12	.7
Underheight	25	3.0	.7
Hydrocele	17	2.4	.4
Alcoholism	15	1.8	.4
Hemorrhoids (external)	12	1.4	.3
Defective hearing	12	1.4	.3
Neisser infection (acute)	11	1.0	.3
Varicose veins	11	1.0	.3
Ankylosed joints	8	.96	.2
Postoperative hernia	8	.96	.2
Undescended testicle	8	.96	.2
Impediment of speech	6	.70	.1
Arrhythmia heart	6	.70	.1
Atrophic testicles	5	.58	.1
Amputations	5	.58	.1
Mental aberration	4	.48	.1
Aortic heart murmur	3	.48	.08
Syphilis	3	.35	.08
Hypospadias	2	.35	.08
Tumor of testicle	2	.24	.05
Scoliosis	2	.24	.05
Obesity	2	.24	.05
Pleurisy	2	.24	.05
Otitis Media	2	.24	.05
Phimosis	2	.24	.05
General undesirability	2	.24	.05
Pulmonary heart murmur	1	.12	.02
Enteroptosis	1	.12	.02
Eczema	1	.12	.02
Venereal warts	1	.12	.02
Conjunctivitis chronic	1	.12	.02
Cirrhosis of liver	1	.12	.02
Psoriasis	1	.12	.02
Acne	1	.12	.02
Myocarditis	1	.12	.02
Epilepsy	1	.12	.02
Rectal fistula	1	.12	.02
Club foot	1	.12	.02
Obscene tatooing	1	.12	.02
Iritis	1	.12	.02
Strabismus	1	.12	.02

Where the applicant exhibited more than one

defect, that one most disqualifying from a Naval standpoint is listed.

Defective vision caused the highest percentage of rejections. The minimum allowed is 15/20 corrected by glasses to 20/20. The fraction 15/20 denotes that the applicant must stand 15 feet away from the chart in order to correctly read standard type normally seen at 20 feet.

Color blindness was present in 6% of the rejects, or 1.4% of all applicants. The latter figure is considerably lower than that obtained by Jeffries who examined 19,183 males and found 802 color blind, or 4.18%.[1]

A committee of the Ophthalmological Society of London examined 14,846 males and found 617, or 4.15%, color blind.[1]

Gatewood states that in three fiscal years between 1895 and 1906, out of 74,300 applicants examined for first enlistment, 3.2% were color blind.[1]

It is interesting to note that color blindness appeared in three brothers of one family and two in another in our series.

Care was taken not to condemn as color blind one who was only color ignorant. The applicant was given a colored skein to match rather than told to pick out shades of a certain named color.

As all the men were volunteers and anxious to enroll, simulation in eye examinations may be practically ruled out. By using various combinations of letters on the test chart, chances of a candidate having learned certain lines by rote were avoided.

Regarding heart murmurs, conscientious attempt was made to rule out the functional varieties. Many applicants found with heart murmurs were submitted to a subsequent examination for final decision. The history of diseased tonsils and previous rheumatic attacks could be elicited in many of the heart rejects.

Small varicoceles were not considered as cause for rejection. Only in cases where the varicocele approached the size of the testis were the applicants turned down. In all cases where the applicants were passed with varicocele, permission for subsequent surgical treatment if indicated, was obtained.

Many were rejected on account of insufficient teeth. The Navy regulations call for at least twenty sound teeth with four opposed molars and incisors respectively. Properly filled teeth are counted as sound.

The percentage of flat feet rejects was rather small. The method of gauging flat-footedness is as follows:

"The height of the arch is measured as the distance from a line drawn between (a) the lower border of the internal malleolus and (b) the lower tubercle on the head of the first metatarsal (Feiss line) to (c), the tubercle of the scaphoid, which distance should not exceed one-half inch. This measurement is relative and is simply a measurement of proportion in the average foot." Of course additional signs are looked for, such as attitude in standing and walking; distribution of weight as shown by applicant's shoes; contour of feet side by side with the two internal malleoli and metatarso-phalangeal joints touching; range of motion, especially adduction or inversion of foot, and history of pain or previous arch trouble.

Underweight and underheight were the causes of many rejections. The minimum height accepted in the Navy is 64 inches, with a corresponding weight of 128 pounds. In some cases where the deficiency was not too great and the applicant otherwise desirable, acceptance was gained by waiver. Those temporarily underweight were asked to appear for subsequent examination.

Of the cases listed as post-operative hernias, the great majority followed appendectomies.

Any case of appreciable change in breath sounds found in the lung examination was regarded as suspicious and either rejected as suspected tuberculosis or re-examined subsequently in case of an acute bronchitis.

Hemorrhoids were mostly of the external type and a cause of rejection only when large.

Impediment of speech consisted mainly of stuttering and this was considered sufficient cause for rejection. A stuttering "Jackie" is usually subjected to painful ridicule by his more fortunate shipmates.

Cardiac arrhythmias caused various rejections. In some cases this was attributed to overuse of tobacco, in others to pure nervousness. In none, was any thyroid enlargement found.

Applicants with undescended testicles were rejected on account of the possibility of future complications.

Among the five cases rejected for atrophic testicles, three gave as causes previous attacks of mumps.

No routine blood examination was done for syphilis. Those rejected showed unmistakable clinical signs.

1 Gatewood—Naval Hygiene, p. 707.

ORIGINAL ARTICLES

UROLOGICAL DIAGNOSIS IN GENERAL PRACTICE.*

By FRANK HINMAN, M. D., San Francisco, Cal.

The recognition at an early stage of almost any urological disease, whether in man, woman or child, and immediate institution of proper treatment would give a high percentage of complete cures; would prevent many chronic and hopeless complications, and would greatly lower mortality. Many urological conditions may be recognized without the need of any special procedure of examination. In the majority, however, particular methods are required before a diagnosis can be made. It is the purpose of this paper to call attention to the value of a properly performed routine urological examination on the part of the general practitioner, which will enable him not only to diagnose earlier those conditions possible of diagnosis by such an examination, but also to refer at an earlier date particular cases requiring a more complete urological study. The late recognition of many chronic genito-urinary ailments is

* Read October 2, 1916, before the Fresno County Medical Society, Fresno, Cal.

often, to be sure, the fault of the patient in not seeking medical advice. For example, stone may be present in the kidney for years, and the patient have no symptomatic knowledge of it; but when that patient finally consults a doctor for the pyuria that results and is then treated over a long period for a cystitis, who is to blame for the completely destroyed kidney? In case of bilateral silent stones there will result irreparable damage to both kidneys. The following case (Case I) is an example:

A young man at the age of 26 was told by his doctor that he had pus and blood in his urine. He is now 38. Pus has been continuously present in his urine for twelve years. He has seen, in these twelve years, many different doctors and has been variously treated. He has had dilute hydrochlorid acid for epigastric pain and bladder irrigations over prolonged periods for cystitis. He has never had renal colic or lumbar pains. Recently an X-ray examination, the only one he has ever had, showed enormous bilateral stone casts of large pyonephrotic kidneys. Had these stones been recognized when pus was first found in the urine, as they would, had the proper routine examination been made, twelve years of gradual destruction of both kidneys would have been saved.

For the purpose of the present consideration, the close anatomical and functional association of urinary and genital cases permit of one general preliminary examination to cover all cases. It is on the indications of such a preliminary study that more detailed investigations of either group are made. Such a routine should include a detailed urinary and genital history, urine examination, an examination of the external genitalia and, in the male, a rectal examination. The indication of a lesion of the upper urinary tract would then require additional procedures which would differ from that for a lesion of the lower urinary tract. Certain routines, for teaching purposes as well as to insure thoroughness, have been established in the University of California clinic. In the study of kidney cases renal X-ray and functional study are required as preliminary to the more special examination of cystoscopy, wax-tipped exploration, separate functional study, pyelography and so forth. Examination of cases with acute and chronic lesions of the lower urinary and genital tract also are followed in a routine way. These methods might be advantageously adapted in general practise and are as follows:

TECHNIC OF EXAMINATION IN ACUTE URETHRITIS.

I. Examination of External Genitalia.
II. Examination of Urethral Discharge. (Make very thin smear. Use Gram's Method.)
III. Examination of Urine:
  a. Three Glass Test.
  b. Young's Seven Glass Test when indicated. Note: No patient with profuse discharge is ever to be instrumented.

TECHNIC OF EXAMINATION IN CHRONIC INFECTIONS OF THE URINARY TRACT.

I. Examination of the External Genitalia.
II. Examination of Discharge, if any is present.
III. Examination of Urine:
  a. Three Glass Test.
  b. Seven Glass Test.
IV. Rectal Examination.
  a. Note sphincter tone and absence or presence of hemorrhoids.
  b. Outline and examine prostate. Note the form and consistency of the right and left lobes, the character of the median furrow and notch, and the recto-prostatic sulci, the existence of lateral adhesions, and the presence of areas of induration, nodulation or stony hardness.
  c. Outline and examine the seminal vesicles. Note the relative distention, consistency and the character of areas of induration or nodulation. Palpate for vasa differentia. Note character of intervesicular area.
  d. Examine microscopically secretion obtained after massage. (Where the vesicular secretion is to be examined separately from the prostatic secretion, Cabot's method should be used.)

  Cabot's Method:
  1. Urethral irrigation and bladder filled with irrigating fluid.
  2. Prostate massaged, care being taken not to strip the vesicles. Secretion obtained is the prostatic secretion. Have patient void.
  3. Repeat urethral irrigation and bladder distention.
  4. Strip the vesicles. The secretion obtained will be vesicular secretion.
  5. Have patient void and examine the secretion in the voided specimen, if none obtained by the above stripping.
V. Urethral irrigation preparatory to instrumental examination of the urethra.
VI. Examine anterior urethra with a bougi a Boule. (Begin with 29F and use smaller sizes as necessary. Note size of meatus. As a rule, meatotomy indicated when smaller than 26F.)
VII. Examination of posterior urethra with sounds. (Begin with small size, usually 22F and gradually increase the size to 26F or 28F. Never use force. Have sound well lubricated.
VIII. Examination with the endoscope. (This examination should usually be preceded by a period of dilatation in order to get the urethra accustomed to instrumentation.

Three of the more preliminary of the steps in a urological examination, namely, urine, rectal and X-ray, are worthy of detailed consideration since their neglect, or faulty interpretation, causes the greatest number of mistakes in diagnosis.

The viewpoint of the urologist in regard to the information sought, differs somewhat from the ordinarily held in making an examination of the urine. Pus, blood and the type of infection, take precedence in his mind over specific gravity, albumen, sugar, and casts. In the ordinary examination of the urine a few pus or blood cells and an occasional organism have little significance, and are too readily explained as a urethral or vaginal contamination. Pus and blood, unless they produce macroscopic cloudiness, rarely attract particular attention, and even then, if of periodic and short duration, are wholly disregarded. The adoption of the urologist's point of view, that pus, blood, and bacteria, no matter how small in amount are pathological, would often save much valuable time in diagnosis. The method of collection is of the first importance in an examination of the urine for these evidences of disease. Morning specimens or a portion of the 24-hour specimen brought to the office by the patient have no value. The urine must be freshly

FIG. I.

FINDINGS OF THE THREE AND SEVEN GLASS TESTS (after Young).

Portion of Urethra.	Discharge at Meatus.	3 glass test.			Young's 7 glass tests.							Prostate on palpation.	Secretion.
		1	2	3	1	2	3	4	5	6	7		
Pendulous Urethritis	Present	—	—	—	—	—	—	—	—	—	—	Normal	Normal
		S			S								
Bulbous Urethritis	Absent	—	—	—	—	—	—	—	—	—	—	"	"
		S					S						
Posterior Urethritis without Prostatitis	"	—	—	—	—	—	—	—	—	—	—	"	Pus cells in small number
		S							S				
Posterior Urethritis with Prostatis	"	—	—	—	—	—	—	—	—	—	—	Indurated or enlarged	Pus cells in great number
		S		S					S		S		
Prostatistic without Urethritis	"	—	—	—	—	—	—	—	—	—	—	"	"
				S							S		
Seminal vesiculitis	"	—	—	—	—	—	—	—	—	—	—	Seminal vesicle indurated —enlarged	Massage of vesicle gives pus
				C							C		
Cystitis and Pyelitis	"	—	—	—	—	—	—	—	—	—	—	Prostate may or may not be involved	May or may not contain pus
		C	C	C					C	C	C		

S = Shreds.
C = Cloudy.
— = Clear.

voided and examined immediately. Cloudiness may be due to pus, blood, bacteria or, in the male, spermatozoa, and to phosphates, urates or mucus. The microscope is the best test for the first four. A little acetic acid clears phosphatic cloudiness. Heating dissolves urates and standing a few minutes identifies mucus. A knowledge of the character of bladder urine uncontaminated by any secretions of the urethra or accessory organs is wanted in every case, and usually may be easily obtained without the necessity of catheterization. For this purpose the three glass test is a valuable method in both men and women, and if the external genitalia have been previously cleansed the third glass will give urine suitable even for cultural study, except of course in the male when cystitis or vesiculitis is present. Fig. I will show the findings of the three and seven glass tests. The seven glass test of Young is more accurate for the identification of the source of pus in the lower urinary tract, but is indicated only when there is a history or evidence of disease here. After the exclusion of these accessories as the source, the finding of any pathological elements in the bladder urine raises the problem of determining its portal of entry. There are a number of serious kidney lesions which are evidenced at first only by bleeding, and have no associated signs or symptoms. The only evidence of stone in the kidney or ureter may be a few red blood cells in the urine. The hematuria of renal tumor is periodic and is its commonest initial sign. Usually, however, it is of short duration, which fact should not be overlooked. A large percentage of pyurias are treated for cystitis without proper investigation. Usually cystitis is present in these cases, but the cystitis is secondary and will clear up without treatment upon the cure of the primary focus. Primary cystitis in the male sex is practically unknown. In women and female children infections not infrequently ascend the relatively short urethra. Of a number of cases of supposed pyelitis and pyelo-cystitis in girls between two and eight years old, which have been referred for examination recently, in four, cystoscopic examination with ureteral catheterization found the kidneys to be free of pus and infection, which was shown to be in these four cases confined to the bladder. But even in women and children primary cystitis is the exception. It is a grievous error, therefore, to institute any treatment for cystitis without first ascertaining the condition of the urinary tract below the bladder, and if found negative a thorough investigation above the bladder should be made. Fig. II shows the possible source of pus in the female. In the male there are added the accessory genital sources, such as the prostate, seminal vesicles, Cowper's glands and the glands of Litre.

The bacteriology of urinary infections is fairly simple. The colon bacillus is found in from 70% to 80% of renal infections and from 50% to 60% of vesical infections. Staphylococci are present in about 10% and streptococci and the proteus group of organisms are next in about equal frequency. Tubercle bacilli occur probably in 5%. The other organisms reported, of which there is a very long list, are extremely uncommon so that five organisms cover 95% of urinary infections; namely, bacillus coli communis, staphylococcus, streptococcus, proteus vulgaris and tubercle bacillus. The first and last always occur in acid

urines, whereas the proteus group decompose urea and produce a strongly alkaline urine so that a knowledge of urinary reaction with the findings of a stained smear will usually make a bacteriologic diagnosis. A pyuria without demonstrable organism upon ordinary culture media, that is, so-called sterile pus, is significant of tuberculosis or gonorrhoea. A sterile pyuria is often kept up indefinitely in women by gonorrhoeal trigonitis. Tubercle bacilli, however, should always be most carefully excluded in every case with sterile pus. An exceptional form of true sterile pyuria has been recently seen in which the pus invaded the bladder from a metastatic lympho-sarcoma.

The frequency in early life of gonorrhoeal complications and in later life of prostatic disease warrants a thorough rectal examination as a routine part of every physical, excepting most cases of acute urethritis. The palpation of the gland as usually conducted forms a most incomplete examination. A definite procedure should be adopted, as has been outlined above, and the furrow, notch, the depth of the lateral sulci and lateral lobe characteristics noted. The region of the vesicles and vasa should be explored, as well as the intervesicular area. In gonorrhoeal infections a rectal examination has little or no value unless controlled by microscopical examination of the secretion. Massage of the prostate followed by an irrigation and then by stripping the vesicles will usually give the prostatic and vesicular secretions for separate examination; but Cabot's technic, as given above in table I, is often more satisfactory. A warning seems in place here against the faulty interpretation of small amounts of pus on the first examination. If the secretion shows no pus after a thorough massage it is safe to consider the prostate and vesicles negative, but a few pus cells should be regarded with suspicion and all such cases should be made to return in one or two days for a second massage and stripping. It not infrequently happens that on the second examination the secretions will be found loaded with pus. The frequency of vesiculitis as a cause of cystitis or pyuria should also be emphasized. I recall two cases which have had pronounced pyruia for years, in whom no other focus than a chronic vesiculitis can be found. The response to treatment in both has been very satisfactory.

Prostatism is a condition which can be recognized early by the general profession. A rectal examination should never be neglected in a man over fifty. It is not always possible, however, to recognize hypertrophy by a rectal examination and there are many other conditions which will give symptoms of obstruction to urination. The term "prostatism" applies particularly to chronic diseases of the prostate which produce obstruction. These are hypertrophy, atrophy and cancer. A stone, tumor or diverticulum of the bladder may give identical symptoms. Acquired or congenital stricture of the urethra, and urethral stone, or tumor may give a similar picture. Disease or injury of the spinal cord should always be carefully excluded, particularly early tabes dorsalis and general paresis. It is well to remember that many inflammatory conditions, such as cystitis, prostatitis and posterior urethritis often cause acute or temporary urinary disturbances. Atrophy of the prostate, synonymous with contracture of the vesical neck or median prostratic bar, usually occurs in men under 50. The diagnosis is based on symptoms of prostatism, negative rectal finding, residual urine and a certain cystoscopic picture. Cancer of the prostate coexists with hypertrophy in 20% of the cases and hypertrophy is present in 75% of prostatic cancers so that it is seen that the majority of cancers will have an associated hypertrophy. Cancer always attacks primarily the posterior lobe, and the diagnosis depends almost solely upon the evidence of a rectal examination. The cancerous invasion produces a characteristic stony hard induration quite different from that of tuberculosis which is nodular, and rarely primary. This stony hard induration, however, is sometimes simulated by chronic inflammation. The importance of an early recognition of prostatic cancer lies in the fact that the only possibility of a surgical cure depends upon radical removal before the disease has invaded other tissues. When this has occurred only a paliative operation can be performed for the purpose of relieving the urinary obstruction, and these cases may all eventually die of carcinomatosis. Of twelve cases of cancer of the prostate, personally operated in the last three years, not one has sought treatment early enough to permit of radical removal.

It is estimated that 35% of all men over 55 years of age have hypertrophy of the prostate but only 15% of these have symptoms. This 15% should have much more intelligent consideration than they get at present. The majority now are labeled as enlarged prostatics and left to a life of progressive misery until retention or some complication finally demands relief. When symptoms once begin the disease has been found to be progressive. Casper considers this progression in three stages: (1) premonitory, (2) retention without dilatation, and (3) retention with dilatation of the bladder. Where infection occurs, however, as it may quickly do when residual urine is present, the clinical picture may be quite different. An infection supervening in the second stage will usually result in a contracted bladder and operation with a contracted bladder, although it may relieve the obstruction, will still leave frequency of urination. Infection present with back pressure quickly travels up the ureters and a pyelonephritis or, with much back pressure, a pyonephrosis will result. It is of considerable importance to the patient, therefore, that back pressure be relieved before infection occurs or before bladder dilatations and ureteral and renal pelvic dilatations have occurred. At the same time it is not advisable that every old man in whom hypertrophy of the prostate has been discovered, should be operated. The question of the opportune time for operative intervention is therefore of considerable importance. In the diagnosis rectal examination will recognize most forms but there are certain partial and intravesical hypertrophies in which it is unreliable. A valuable aid in

diagnosis is urethral catheterization. This will determine the amount of residual urine, the capacity of the bladder, and the length of the urethra. Normally there is no residual. The normal bladder capacity is from 400 cc. to 500 cc. The normal length of the urethra is from seven to eight inches. Hypertrophy of the prostate which gives symptoms, almost invariably shows a residual which will vary according to the stage of the disease and the type of the hyperthophy. The catheter determines also contraction or dilatation of the bladder. The length of the urethra is almost invariably increased. This increase occurs between the verumontanum and the neck of the bladder. On account of the variations in the length of the anterior urethra in different individuals a measurement of the length of the posterior urethra is therefore of more value than a measurement of the length of the whole urethra. In passing a catheter the point when it strikes the external sphincter can be noted, and the point when urine first appears which denotes its passage through the internal sphincter also noted. The difference between these two is the length of the posterior urethra which normally measures from 3½ to 4 cm. and when hypertrophy is present may measure two to three times this length. Very often hypertrophy distorts the posterior urethra sufficiently to render catheterization difficult. This difficulty is easily overcome with the use of a Coude or a double elbowed (bicoude) catheter or a curved mandrin. A very valuable procedure at the time of catheterization is to make a rectal examination while the catheter is in place. Normally the catheter may be felt almost throughout the length of the prostatic urethra because of the shallowness of the prostatic furrow. In hypertrophy the degree of thickening between the urethra and the examining finger is readily appreciated. Of course an anterior lobe hypertrophy or a subtrigonal or subcervical hypertrophy might easily be missed by such an examination. A urethral sound is more resistant and better for estimating this urethro-rectal relationship. The cystoscope of course is invaluable in doubtful cases and particularly in determining accurately the form of hypertrophy, whether general or confined mostly to a median, an anterior or lateral lobe. Rectal examination and the intelligent use of a catheter will, nevertheless, diagnose practically every case.

It will not be possible to discuss at length here the question of when is the proper time to operate a prostatic. There is no question that the mortality results of prostatectomy would be very markedly lowered from their present comparatively low point if all cases came earlier for operation. In the seventy cases which have been personally treated almost one-third had had symptoms longer than ten years, while less than one-third had had symptoms less than five years. Operation in a man who presents a good clinical risk is very benign and the mortality in this type of case would be very low. To advise every man who presents definite symptoms and a residual urine to have an operation would seem justified.

The importance of x-ray examination in urological conditions is principally for the determination of the presence of renal, ureteral or bladder calculi. It is a sound practice to refer every case with doubtful pyuria, hematuria or renal pain for an x-ray examination but it should be emphasized that the study is not complete when a negative report comes back. The x-ray plate will not recognize all renal stones, and is much more inaccurate in the recognition of ureteral stones. About 20% of stones in the ureter fail to cast a shadow in the x-ray plate. Fig. II shows graphically the position of twenty-eight stones shown by the x-ray (series of Geraghty and Hinman). It is seen by this diagram that none of these stones occurred in that portion of the ureter over the shadow of the sacrum, and it is very probable that it is in this portion that the x-ray misses the greater number of ureteral stones. A negative x-ray finding, therefore, is not complete and all cases in which this condition is possible should be referred for a thorough urological examination.

The following few cases will illustrate some of the serious complications resulting from delay in urological diagnosis. Many of the cases would have been recognized early had such a routine procedure as already outlined been followed.

Case I—Bilateral Renal Calculi:

Ed. F. B. Aet 38. Married. P. C. No. 226. U. C. No. 11565. Admitted June 15th, 1916. Discharged July 31st, 1916. Operation June 19th, 1916. Left nephrotomy. Large coral calculus removed (Fig. III). Patient upon admission had no particular complaint but came to the hospital for examination because of the finding of pus in the urine by Dr. McVey of Oakland.

Family history, negative.

Past history: Diphtheria (10), pneumonia (11), measles (19), mumps (22), right herniotomy (26), left radical mastoid (30). Present illness shows no definite onset. Patient has never had lumbar pain or discomfort. No urinary disturbance. The last few years has had to get up once at night but no difficulty or burning. About twelve years ago, when examined by a physician in Virginia, he was told that his urine contained pus and blood, some albumen and a few casts. Since that time he has occasionally seen blood cells himself in his urine. In the fall of 1912 he had attacks of non-radiating epigastric pain, relieved by hot applications and by vomiting. Took dilute hydrochloric acid, as prescribed by a physician, which relieved the attacks for three or four months.

P. E. Heart negative. Neither kidney palpable. Urine, June 16th, specific gravity 1012, acid. Trace of albumen; no sugar; hyaline and granular casts; many red blood and pus cells; numerous motile bacilli and staphylococci.

Phthalein test, first hour 36%, second hour, 22%.

On June 18th, phthalein test, first hour 36%, second hour 20%.

On June 20th, first hour 25%, second hour 15%.

On June 29th, first hour 24%, second hour 22%.

Blood count, 80% hemoglobin, 9,200 white blood cells.

X-ray examination, June 16th, shows large coral-shaped bilateral stones in kidneys (Figs. IV and V).

Cystoscopic examination shows many pus cells on both sides and motile bacilli found in both specimens. Phthalein appeared on the left in four minutes, right in five and one-half minutes. Thirty-minute output on the left, 15%, thirty-minute output on the right, 15%. At operation the left side was operated on first because the X-ray showed this side to have a smaller stone and the functional

study indicated it to be the better kidney. At the operation the kidneys were found to be very large and sac-like. Perirenal tissues were many times thicker than normal and were found to be very adherent at its upper pole so that it was delivered with difficulty. The stone shown in Figue III was removed through a longitudinal incision of the cortex. At the upper pole of the kidney a small abscess pocket was opened and there was a smaller abscess towards the mid part of the kidney. These were opened and curetted. There seemed to be very little secreting cortex left, but the two halves were sutured together with a few loose chromic gut sutures, enough to control bleeding and the kidney put back in place.

This case has done remarkably well following operation, considering the extreme pyonephrotic kidneys he has to live on (the lumbar wound has been closed for many weeks). Total phthalein test 10/17; first hour 38%, second hour 20%. The urine, however, has been, and is still, loaded with pus. Culture shows bacilli of colon and mucosus capsulatus groups, of which a vaccine has been administered. The patient is actively at work (principal of large grammar school).

Note: The very grave prognosis of this case would have been different had these kidney stones been recognized twelve years earlier, as they would have had the above routine method of X-ray examination been followed.

Case II. Enlarged prostate with median bar and chronic urinary infection. G. B. Aet 63. P. C. No. 66. Admitted August 12th, 1915. Discharged September 29th, 1915.

Family history and past history, irrelevant.

Complains of pain in the region of the bladder, frequency of urination and general loss of strength.

P. I. For more than 20 years patient has had gradually increasing frequency in urination. Eight years ago had acute attack of pyuria with marked burning and pain on urination, which lasted for ten days. A year later frequency and burning recurred in exaggerated form and he would get up as often as eight or nine times at night. Would often be unable to void until he had gotten into a hot Sitz bath. These severe attacks recurred about every year, sometimes lasting two or three months. In between attacks there would still be great frequency, pain and general weakness and the urine has been continuously cloudy and ropy. Has lost about 20 pounds in weight in three years.

P. E. High pitch, blowing systolic murmur at apex, transmitted to the axilla. The abdomen is negative. Urine is loaded with pus; many organisms; few red blood cells; hyaline and granular casts. Phthalein test, August 17th, first hour 13%, second hour 22%. Phthalein test, September 28th, first hour 5%, second hour 10%.

Rectal examination: Prostate is slightly enlarged, soft and smooth. Median furrow and notch partly obliterated. Cystoscopic examination: Residual 150 cc. Bladder capacity 750 cc. Cultures of bladder urine show streptococci and pyocaneus. Bladder wall marked by trabeculated, several cellules present and back of the end of the trigone is a very deep cellule. Marked granular cystitis. Ureteral orifices slightly dilated. Catheterization of ureters shows marked pyelonephritis on both sides. Inspection of the vesical orifice shows perfectly smooth, round outline. No sulci seen. Appearance of collar hypertrophy. There is definite thickening between the shaft of the instrument and the examining finger in the rectum.

Operation, August 19th. Perineal prostatectomy, moderately hypertrophied gland being removed with the curette and the vesical orifice was opened with Young's punch through the perineum. Convalescence uneventful. Control of urination on the 22nd. First voided through the urethra on the 26th. Discharged on the 29th of September. Very little leakage through the perineal fistula. Perfect control of urination. Urine still loaded with pus and organisms. For the past two weeks has been getting vaccine treatment for the kidney infection. Patient returned home and instructed to use Urotropin and bladder irrigations. Last heard from in August, 1916. Urine was still cloudy but the general condition was very much improved. Perfect control of urination. Gets up at night one to three times and urinates every two to three hours during the day.

Note: This case undoubtedly had a contracture of the vesical neck which began to give troublesome symptoms about his 45th year. This was followed by residual and infection and later a small hypertrophy. Recognition of the condition 20 years earlier would have prevented many years of suffering.

Case III. Congenital vesical diverticulum.

G. M. Aet 57. Surgical number 10961. Admitted March 9th, 1916. Operated June 2nd. Died June 24th. Complaint: Frequency and painful urination. Family history, negative. Occupation, book binder. No illness before P. I. Twenty years ago was treated for premature ejaculations by dilatations with cold sounds. Following this treatment had complete incontinence for about two months for which he had to wear a urinal. Completely regained control of urination but with marked frequency and urgency, every hour during the day and four to five times at night. Would have considerable pain in the bladder both before and after urination and noticed at this time that the urine was markedly cloudy. This condition has been continuous up to the present and has gradually grown worse. Four years ago was unable to void when the desire came and forcibly held his urine for some little time when suddenly was seized with severe pain low down in the back. This pain persisted for about six hours and since then his condition has been as before; marked frequency, urgency and painful urination. Five months ago first noticed blood in the urine, which persisted for two days and in two weeks had a second attack of hematuria, since when there has been no bleeding. Status presence: Urinates every hour during the day and four to six times at night. Marked pain before and after urination; marked urgency. Urine loaded with pus. Patient has had pronounced intestinal symptoms for several years; constipation, meteorism and abdominal cramps.

P. E. Heart slightly enlarged. Soft systolic murmur at the apex transmitted to the axilla. Blood pressure 110-70. Abdomen, negative. Neither kidney palpable. X-ray of the kidneys negative. Urine. Three glass test shows cloudiness, loaded with pus and organisms; motile bacilli and cocci; no casts. Urine culture shows pyocyaneus. Prostate not enlarged per rectum. Median furrow and notch are marked. No deep notch to the sides. Phthalein test, March 9th, first hour 22%, second hour 37%. March 10th, first hour 10%, second hour 30%. This test was done with the retention catheter. March 11th, urea nitrogen in the blood 15.1 per 100 cc.

Cystoscopic examination shows no intravesical enlargement of the prostate. In the mid line just behind the trigone is seen the mouth of a diverticulum. Bladder wall is markedly trabeculated and in the region of the right ureter are three well marked cellules. Rectal examination with the instrument in the bladder reveals no thickening between the shaft of the instrument and the examining finger. There is no median bar formation or contracture of the vesical neck. The right ureter was catheterized. Not possible to pass the catheter on the left side. Phthalein appeared in six minutes, first 15 minutes output 10%, second 15 minute output 10%. A ureteral catheter was inserted and the patient taken to the X-ray room. Bladder filled with collargol with the patient in the Trendellenberg position, shows picture in Figure VI. The bladder was then emptied and

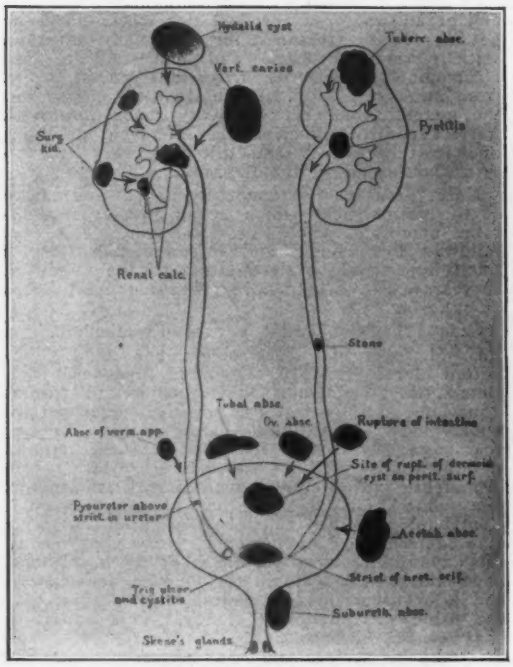

FIGURE II (From Kelly & Burnham).

Diagrammatic representation of possible source of pus in the female. Pyonephrosis and pyelonephritis should be included. In the male the lower genital tract is much more frequently responsible, the analogue of Skene's glands being prostatitis, seminal vesiculitis, Cowperitis and Litritis. Urethritis is potent in both, but particularly posterior urethritis in the male.

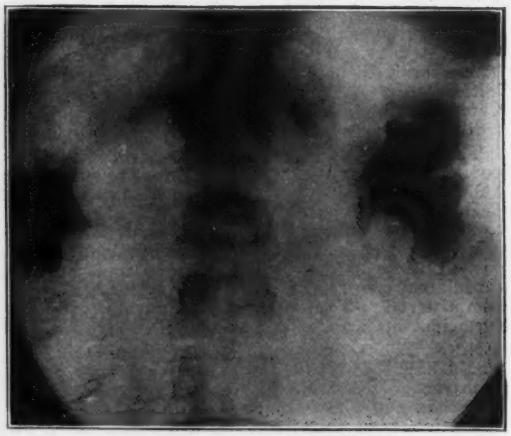

FIGURE IV.

X-ray picture of Case I, showing pelves and calyces of both kidneys as beautifully outlined by calcification as when injected with Collargol or Thorium. The smaller stone in the better kidney was removed and patient will return later for removal of the left-sided stone.

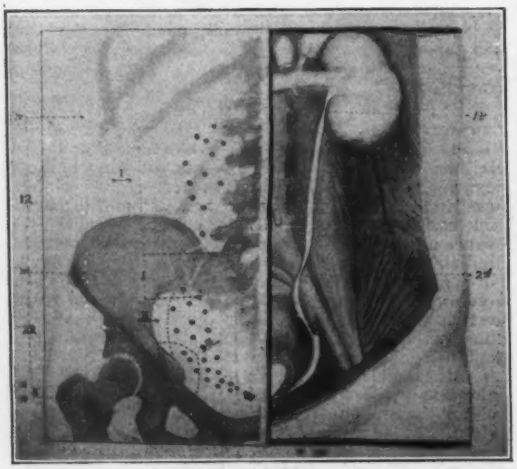

FIGURE III.

Graphic representation of the ureter with its four anatomical points of narrowing. Stones that are missed in the X-ray occur most frequently in that portion behind the shadow cast by the sacral wing. As shown on the right half of diagram, there were no stone shadows in this portion of the thirty-nine cases analyzed (Geraghty and Hinman). In the same series six additional cases of ureteral stone, which failed upon repeated examination to cast a shadow in the X-ray plates, were identified by means of the wax-tipped catheter. As seen in the diagram, five, or fifteen per cent. of the ureteral stones occur in the intramural portion, readily accessible for removal by cystoscopic methods.

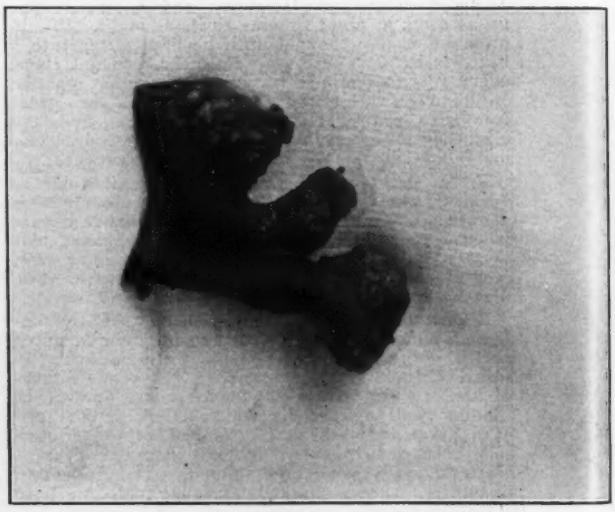

FIGURE V.

Photograph of stone removed by Nephrotomy from right kidney of Case I. The stone presented no line of cleavage by fracture as is common in such large renal calculi, the result presumably of bending of the kidney from movement in respiration.

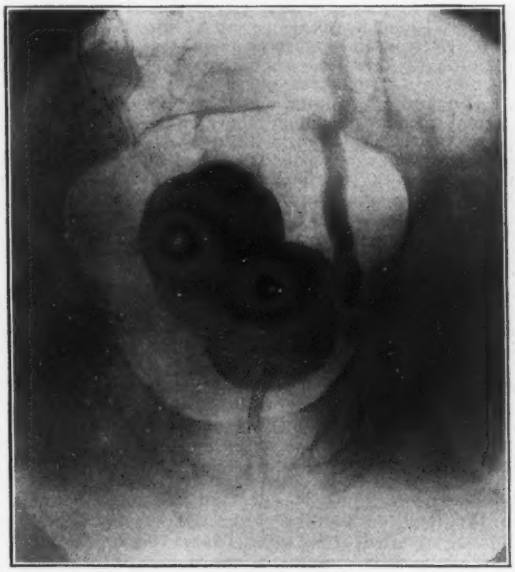

FIGURE VI, CASE IV.
Diverticulum of the bladder and a dilated left ureter, filled with Collargol.

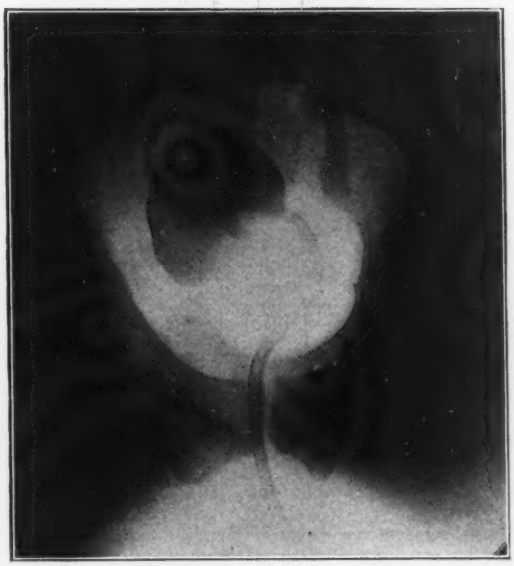

FIGURE VII, CASE III.
Bladder filled with air. Diverticulum and dilated left ureter filled with Collargol.

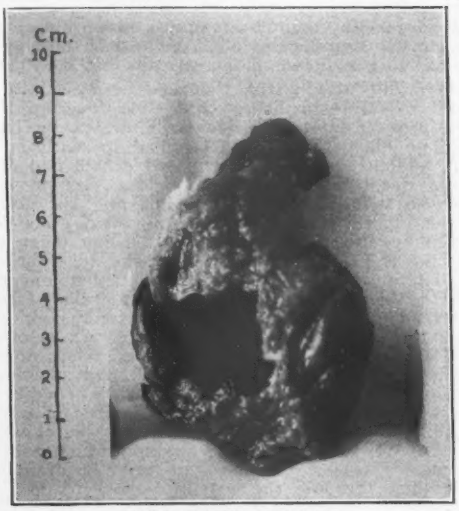

FIGURE VIII, CASE III.
Photograph of diverticulum removed at operation.

FIGURE IX.
Photograph of kidney tumor removed at operation in Case V.

FIGURE X.
Pyelograms (Thorium nitrate) of Case VI. Show beginning retraction of major and bulbous dilatation of minor calyces which is characteristic of polycystic kidney.

distended with air, which shows large diverticulum, markedly dilated left ureter (and left pyonephrosis, not shown in photograph) (Fig. VII).

Operation, March 20th. Marked pericystitis and peridiverticulitis, it being impossible to strip the peritoneum from the bladder without tearing into it. The bladder wall was stripped up with difficulty and the diverticulum exposed, which had dissected deep posteriorly between the rectum and the prostate. Bladder was opened and slit down to the mouth of the diverticulum, which was removed by a circular incision, care being taken to free the right hydroureter which was adherent to the lateral wall of the diverticulum but opened into the bladder independently. The walls of the diverticulum were markedly hypertrophied as shown in Figure VIII. The bladder was closed with chromic gut sutures, large drains left down to the pouch outside of the bladder and a rubber tube placed in the bladder. Patient's condition was satisfactory, bladder drainage being facilitated by suction pump after the method of Churchman. On the 25th of May, the suprapubic wound had completely closed and the patient was draining altogether through the retention catheter. On the 26th the retention catheter was removed. On the 29th phthalein test, first hour 25%, second hour 12%. Urine was very cloudy and loaded with pus. The suprapubic wound has remained dry for four days and the patient has been voiding his urine per the urethra. On the 31st of May, patient was seized with severe cramp-like pains in the upper abdomen, confined mostly to the epigastrium (he had eaten blackberry pie the day before), and showed moderate abdominal distention. Bowels had not moved for two days. All enemata had been returned clear and on the first of June, patient vomited greenish-colored fluid and complained of more abdominal pain. Blood urea nitrogen 28 mg. per 100 cc. On the 2nd of June the patient's abdominal condition remained unchanged. Bowel movement not obtained. Great abdominal distention. Vomited fecal material for the first time. Eserin had been given hypodermically without effect. Blood urea nitrogen 49.4 mg. per 100 cc. at 1:30 p. m. Operation at 5:15 by Dr. Pope. Incision was made on the left lower quadrant just above the anterior superior spine; 50 cc. of clear straw-colored fluid obtained upon opening the peritoneal cavity. Large mass of adhesions in mid line just below the umbilicus consisting of peritoneum omentum and descending colon. Not possible to bring the colon over to the abdominal wall so that enterostomy was done upon the presenting intestine which was ileum. On June 3rd, the intestine was opened at 6 a. m. and about 600 cc. of greenish-brown fluid escaped. Patient much relieved. On June 7th patient had good bowel movement. On the 10th vomiting and cramp-like abdominal pains occurred, and slight abdominal distention. Bowels had not moved for 24 hours either by enterostomy opening or rectum. No bowel movement by the 14th. Incoagulable nitrogen 90. mg. per 100 cc. on this date (normal 15.). No change on the 17th. Attempt to feed by colostomy openings were unsuccessful. Second enterostomy performed on the 17th of March. The portion of the intestine above the old enterostomy site was collapsed and bleeding, and the intestine above distended. Portions of this distended gut were brought to the surface. Patient gradually grew weaker and died on the 24th of June. Autopsy not permitted. Death from chronic peritonitis, intestinal obstruction and pyelonephritis.

Note: This case has shown pronounced symptoms for 20 years during all of which time the condition was not recognized because he had never had a thorough urological examination. Early recognition again would have saved a lifetime of suffering. The progression to pronounced pericystitis and peridiverticulitis with the formation of localized peritonitis and intestinal adhesions accounts for the fatal issue.

Case IV. Papilloma of Bladder.

T. M. Aet 60. U. C. No. 11912. Admitted August 4th, 1916. Died August 9th, 1916.

Family history and past history, negative. Complaint: Blood in the urine and shortness of breath. P. I. Began nine years ago with burning on urination. At this time there was bright red blood in the urine for three days. This attack cleared up and two years later, or seven years ago, had a second attack in which there was urgency and frequency of urination, with marked difficulty and pain. This urinary disturbance lasted for seven hours, when it practically cleared, but blood persisted in the urine for four days. The pain at the time of urination appeared to be at the base of the bladder and did not radiate. Three months later had burning on urination for three days but very little difficulty or pain on urination. Attacks of this kind have recurred about every three or four months for the last six years. There has been very little pain or discomfort and the attacks have been mostly attacks of hematuria. The last attack started three to four days ago after three months' remission and the bleeding is still present. Urinates every two hours during the day and once at night. Between attacks there is no nycturia; no difficulty in starting urine; no dribbling. For the last two weeks has had shortness of breath on exertion. Worked up until two days ago. Has not felt ill at any time. Has lost about twenty pounds in the last ten months.

P. E. Patient very poorly nourished. Showed marked anemia. Systolic murmur at the apex transmitted to the axilla and also heard over the aortic and pulmonary areas. Abdomen negative. Wassermann negative. Blood on admission showed 20% hemoglobin, 1,628,000 R. B. C.; 10250 W. B. C. Blood pressure 110-90. Urine: Specific gravity 1030 acid; slight trace of albumen; no sugar; no casts; many red blood cells; no pus.

Cystoscopic examination: No residual; bladder capacity 200 cc. The base and sides of the bladder near the vesical orifice are covered by a broad villous and papillomatous tumor. The tumor covers up both ureteral orifices and the bladder wall was seen with difficulty over the tumor and showed trabeculation and some cellule formation. There was no evidence of prostatic enlargement and with the finger in the rectum the beak of the cystoscope could be readily felt in the prostatic notch. There was no thickening between the instrument and the finger. Fulguration treatment advised. Proctoscopic examination shows a papillomatotus tumor high up in the rectum. Owing to the low hemoglobin estimation a transfusion was advised and transfusion serum tests were made by the hospital staff. A suitable donor found and the patient transfused. Patient died a few hours after transfusion. Autopsy showed ulcerated, probably benign, polyp of the bladder, small papilloma of the descending colon; marked secondary anemia of all the organs; acute hemorrhagic pancreatitis; chronic diffuse nephritis; hypertrophy of the heart. Gross specimen of bladder saved.

Note: For nine years there was definite indication for a cystoscopic examination in this case. The fatal result sums up the penalty of its neglect.

Case V. Hypernephroma.

J. G. U. C. No. 11768. Admitted July 17th, 1916. Operation July 27th, right nephrectomy. Discharged August 13th. 1916. Complaint: Bloody urine and difficulty on urination because of blood clots in the urine.

Family history, irrelevant. Past history, typhoid at 15. No other illnesses. Occupation, salesman for a liquor concern.

P. I. As long as 22 or 23 years ago patient first noticed that his urine would be occasionally blood-stained for a period of two or three days

and this hematuria recurred every two or three months. There was never any pain or discomfort at these times. Eight years ago had a violent attack of pain in the right lumbar region, accompanied with high fever. This pain radiated into the right testis and lasted off and on for about a week, clots appearing at this time in the urine. These attacks of right lumbar pain, and voiding blood clots recurred at intervals of about six months during the next two or three years. Patient has been under continuous medical care during the last five years and has had attacks of lumbar pain and hematuria every two to four months. Between attacks the urine is clear and the patient feels perfectly well. Never passed stone. Was cystoscoped for the first time a year ago with negative findings.

P. E. No palpable lymph glands. Scrotum negative. No varicocele. Chest negative. Abdomen negative except for the increase in area of dullness in the region of the right kidney. On palpation the lower pole of the kidney can be barely felt. No tenderness. The liver edge reaches 4 cm. below the costal margin. Left kidney not palpable. X-ray of long bones and chest negative. Diaphragm apparently not pushed up on the right side. Blood: 85% hemoglobin; 5,200,000 reds, 8,000 W. B. C. Urine: Specific gravity 1022 acid; heavy cloud of albumen; no sugar; no casts; many red blood cells; and a few pus cells; no organisms.

Phthalein test, intralumbar, August 29th, first hour 42%, second hour 14%. September 2nd, intravenous, first hour 55%, second hour 17%. August 11th, first hour 38%, second hour 16%. Blood urea test, July 17th, 324 mg. per 100 cc.

Cystoscopic examination: July 19th. Bladder normal in appearance. Blood stained stream seen to spurt from the right ureter. Both sides catheterized. No flow obtained from the right side, even after repeated injections with sterile water. Capacity of right pelvis about 5 cc., which reproduces pain on the right side. The phthalein failed to appear in 45 minutes on the right side. Appeared on the left side in 5 minutes; thirty-minute output on the left was 10% (probably inaccurate because of imperfect injection into the vein). Microscopical examination showed an occasional red blood cell; rare white cell on the left side and very many red blood cells on the right side. Cultures from the two sides negative. Pyelogram shows a normal appearing left pelvis and ureter. On the right side there are very dim scattered shadows in the kidney region. The right ureter is seen to end at about the kidney region, evidence of considerable pelvic deformity.

Operation, July 27th. A tumor mass approximately five times the normal size of the kidney, the lower pole of which appeared to consist of normal kidney tissue, whereas, the upper four-fifths was composed of an irregular, granular appearing tumor typical of hypernephroma (Fig. IX). The capsule contained many large venous channels, each of which required ligation. Convalescence was uneventful. Patient left the hospital August 13th, feeling well. Was seen September 18th. Had returned to work. The wound was healed perfectly. No pain. Urine clear.

Case VI. R. J. Aet 56. P. C. No. 284. Admitted September 1st, 1916. Discharged September 7th, 1916.

Complaint: Hematuria. Family history, negative. Past history: Has had mumps, whooping cough, chicken pox, diphtheria, tonsilitis, typhoid malaria. For the last few years has had nycturia twice. No difficulty in urination; some burning.

P. I. Twenty years ago first noticed bloody and cloudy urine, which lasted about three months. Six months later had a second attack which lasted only 3-4 days. Since then, about every three months, has had similar attacks of three to four days' duration. Last attack one month ago, up to which he had not had an attack for one year. The present attack began six weeks ago and has been continuous since the onset. There is no associated pain or discomfort except for the urgency and difficulty in urination because of blood clots.

P. E. Examination: Soft systolic murmur confined to the apex. Blood pressure not taken. The lower pole of the right kidney is barely palpable. The left kidney not felt. Blood count, 68% hemoglobin; 3,8000,000 R. B. C.; 12,000 W. B. C. Urine: Specific gravity 1025, acid; small trace of albumen; no sugar; occasional granular casts; many white blood cells; a great many red blood cells; a few epithelial cells. Total phthalein, September 2nd, first hour 42%, second hour 19%. September 6th, ploridzin test, 1 cc. of 1 to 200 solution injected subcutaneously. No reduction of Fehling's solution in four hours. Specimens collected every fifteen minutes through urethral catheter. September 7th, first hour 35%, second hour 15%. September 8th, urea nitrogen 22.9 mg. per 100 cc. Total noncoagulable nitrogen, 13.8 mg. per 100 cc. Cystoscopic examination: Residual 80 cc. Bladder capacity 550 cc. Bladder negative for stone, tumor or diverticulum. Inspection of the vesical orifice shows small anterior anl bilateral lobe hypertrophy. Ureteral orifices normal in appearance and the left could be seen to eject a blood-stained stream. No blood seen pouring from the right. Both sides catheterized and both showed, miscroscopically, many pus cells; several red blood cells; a few epithelial cells but no casts. Phthalein appeared in six minutes on both sides. Half-hour output, 30% on the left, 20% on the right. No leakage about the catheters as determined by the absence of phthalein in the bladder contents at the end of the thirty-minute period. Patient taken to the X-ray room and double pyelography done, 40 cc. being allowed to flow by gravity on each side. Pyelogram (Fig. X) shows marked deformity of both pelves. The right ureter is dilated and the right pelvis is retracted and deformed. The major calices are retracted and minor calices blunted or obliterated. Opposite the mid part of the pelvis is a small island of Thorium. The left side shows more deformity than the right and simulates the "spider leg" deformity. Two long isthmi of Thorium can be seen leading to the cystic dilatations at some distance from the pelvis, typical of deformity seen in polycystic kidneys.

Note: In the last two cases the significance of hematuria is doubly emphasized. Every case with bloody urine should be regarded as malignant until proven otherwise. For more than 20 years each of these cases gave evidence demanding a thorough urological examination.

TREATMENT OF ECLAMPTOGENIC TOXAEMIA OF PREGNANCY WITH SOME CASE REPORTS.*

By EDWARD N. EWER, M. D., F. A. C. S., Oakland, Cal.

By this term is meant the toxaemia which presents some or all of the following signs: albuminuria, headache, disturbances of vision, high blood pressure, epigastric pain, nausea and vomiting, edema and finally convulsions. It has been suggested that accidental hemorrhage may be added to this list, for if eclampsia without convulsions can cause cerebral apoplexy it may be suspected that it can also cause retro-placental hemorrhage. Albuminuria has often been found in association with this variety of hemorrhage.

The enormous mortality when convulsions supervene places this condition at once among our most formidable diseases. The maternal mortality

* Read before the Alameda County Medical Association, Nov. 14, 1916.

is 20 to 40 per cent. and the infant mortality 30 to 60 per cent., taking the statistics of the country wide. No such mortality occurs in the best clinics, which indicates that better results can be obtained, and that frequent discussion of the treatment in our societies is desirable.

The treatment may be conveniently considered under five headings:

1. Prophylaxis.
2. The pre-eclamptic state.
3. Convulsions first appearing before labor has begun.
4. Convulsions appearing during labor and after dilatation of the cervix is well advanced.
5. Convulsions first appearing a few hours or days after delivery has taken place.

Prophylaxis.—De Normandie says that a physician who has several cases of eclampsia develop in his practice each year is not doing careful work. This may be overstating the case, for patients are notoriously careless about obeying rules of hygiene and many cases of eclampsia develop with great rapidity. Nevertheless, the physician practicing obstetrics has a great responsibility in the matter of prenatal care and the subject is entitled to his best attention.

Urine should be examined every two weeks during pregnancy. The diet should be fairly liberal but not high in proteid. It should be of a character to favor proper daily bowel evacuations, and plenty of water is necessary. Details as to exercise, dress and bathing must be given. The patient should be seen frequently and a record kept of symptoms such as nausea, vomiting, headache, oedema and constipation. Especially important is a monthly record of blood pressure readings. One who is too busy or lazy to do all these things had much better devote his energies to other more lucrative and less onerous branches of medicine.

Case 1. The patient had been three times pregnant. Severe toxaemia but without convulsions was present each time. First pregnancy resulted in a premature baby which survived and is still living. The second and third pregnancies also ended in premature deliveries near term, and both babies died of the toxaemia within forty-eight hours. With this history and a fourth pregnancy beginning it was determined that no point in her hygiene should be neglected. She was given strict instructions regarding clothing, exercise, bathing and bowels and during the last half of the pregnancy the proteid intake was carefully limited, vegetables and fruits were increased and she was made to take a large quantity of an alkaline mineral water daily. The pre-eclamptic syndrome was entirely absent and she gave birth to a healthy baby at term.

The treatment may or may not have been responsible for the gratifying outcome, but there are enough such cases on record to warrant confidence in thorough attention to the hygienic care of not only women with records like hers but all pregnant women.

The Pre-eclamptic State.—This comprises all the toxic symptoms short of convulsions. Headache is often the first sign, or a trace of albumen may be found in the urine. A rise of blood pressure may give warning of impending danger. In normal non-pregnant women it averages 112. During pregnancy it is 118. Any blood pressure over 135 calls for careful investigation and more frequent readings. If it reaches 180 or over, it is probable that other symptoms will soon come on which will demand termination of the pregnancy. As a sole indication for that procedure, however, I believe its importance is overestimated. It has its value in the syndrome, but alone without headache, epigastric pain and the eye symptoms it is not of paramount urgency. I know of a patient who was feeling quite well, Cesareanized hurriedly because she had a blood pressure of 180, and a moderate amount of albumen in the urine. Such enthusiasm for operative obstetrics had best be curbed.

Albuminuria alone should be managed by eliminating proteids, as such, from the diet, substituting green vegetables, fruits and cereals, securing free bowel evacuations and alkalinizing the patient. For this purpose the alkaline mineral waters may be used or cryst. sodium carbonate may be given dissolved in a charged water and with the addition of orange juice and lemon juice. If the condition becomes more serious, Fischer's solution may be given intravenously, in quantities of one quart or more. In one case I saw, this procedure stopped all symptoms for 24 hours, after which they returned as bad as before. This was repeated three days in succession with the same results, and then the uterus was emptied. I have seen much of this alkaline treatment used, both in the pre-eclamptic state and with convulsions. It has been of temporary value but never in an urgent case in my experience did it put aside the necessity for finally emptying the uterus. It is of use in some after conditions which I will mention later. It is of questionable value to put the patient on a strict milk diet for many days at a time. The patient often improves temporarily on milk alone, but if it takes starvation for a purely transient improvement, ending the pregnancy is better treatment than tempting fate too long. The urine should be examined daily and the albumen quantitatively determined. If it increases, and especially if headache, dimness of vision, vomiting and epigastric pain appear in spite of the treatment, the uterus must be emptied. Make this a dogmatic rule. It is apparently nature's method of cure, for at some time during the progress of the toxaemia, in a large percentage of cases, the uterus makes the attempt to rid itself of its burden. If it does not succeed before the toxines overwhelm the system, the woman dies, either with or without convulsions.

It is probably not overstating the facts to say that if the fetus and placenta are delivered early enough, every patient will be saved. Some day this may not be necessary. That time will come when we learn the exact nature of the toxines, if toxines they be, and the manner of their elaboration: then some procedure for their neutralization may be found. These poisons circulating in the blood are probably due to some abnormal change in the protein metabolism, and there is

reason for believing that this disturbance in metabolism originates in the placenta.

The method of terminating the pregnancy depends upon several factors. Usually in the absence of convulsions the induction of labor with Voorhees bags will give the best results. Manual dilatation and forced delivery have no place in the treatment of this class of cases.

Case 2. Labor was due by the Naegle calculation May 22nd. It was the patient's first pregnancy. March 6th there was some swelling of the ankles but no other symptoms of kidney insufficiency. May 1st albumen appeared in the urine. May 3rd the albumen had increased and the blood pressure was 180. May 7th the albumen had greatly increased and blood pressure was 190 in spite of limited diet and alkaline drinks. No other pre-eclamptic symptoms were present, but as the albumen and blood pressure were increasing, it was decided to induce labor. A large Voorhees bag was introduced; pains began in one hour and labor progressed normally thereafter and a small baby was delivered at 10:30 May 8th. The baby showed no evidence of toxaemia and the puerperium was normal.

Case 3. A Japanese woman seven months in her first pregnancy. I was called to see her December 25th because of massive general oedema. The surface would pit at almost any point from head to ankles. The vulva was so edematous that the thighs were kept at right angles to each other as she lay in bed. She complained of headache. There were no eye symptoms. I advised Cesarean section but was overruled by a consultant who insisted upon hot packs and diuretin. The sweating was very depressing and appeared dangerous; so much so that after one of the sweating seances we feared for her life. December 26th the urine contained 0.4 per cent. albumen. It steadily increased till January 3rd, when it was 2.4 per cent. December 27th the blood pressure was 165 Tycos. The urine was scanty. January 6th abdominal Cesarean section was agreed to and a three and a half pound boy was delivered. The mother was restless and in pain for three days. The baby did well on breast milk secured from several other mothers and fed with a medicine dropper. In a few weeks the mother developed a milk supply and was able to nurse it herself.

It is generally advised not to feed the baby at the mother's breast till she has had time to eliminate her surcharge of toxines.

While it is well to keep the skin active in the general treatment of these patients before delivery, obstetric authority is opposed to severe sweating and the use of diuretin.

I would have preferred the bag method of inducing labor in this case had it not been for the oedema of the vulva which made manipulation in the birth canal impossible. I have brought on labor with the bag many times with pre-eclamptic toxaemia as the indication, and have only once seen convulsions come on during the course of the delivery.

Case 4. She was a primipara due April 4th. Six weeks before that date albumen in small quantity was present in the urine. Her diet was restricted, she was given a bottle of Vichy per day and the usual eliminative treatment ordered. Her condition did not seem urgent. Three days later she came to my office looking very ill. She had had a bad night, no sleep, severe headache and vomiting. Blood pressure was 180. Her vision was so blurred that she stumbled over chairs finding a seat in the waiting room. Some smoky urine voided at this time boiled solid in the test tube. She was at once taken to the hospital and a bag introduced under ether anesthesia. As she became partly conscious, a severe convulsion occurred. There was another in ten minutes and a third soon followed. A five and a half pound baby was delivered by vaginal Cesarean section. This operation was chosen in preference to the abdominal section because of the possible danger of infection incident to the previous manipulation in the introduction of the bag dilator and because the baby was small. The delivery was accomplished with high forceps, and the baby's right frontal bone was dented in dragging it over the promontory of the sacrum. Version is better in such a delivery and forceps should never be used unless the head is well engaged. Both mother and baby did well. During the first few hours after delivery the mother retained three pints of Fischer's solution, drip method, per rectum, and later in the day, drank three bottles of Vichy. She passed 120 ounces of urine during that twenty-four hours. The albumen and edema gradually disappeared, but the eye symptoms, as usual, persisted for some weeks.

In the presence of a large baby at full term, vaginal section is likely to be a very difficult performance. Between seven and eight months it should usually be preferred to abdominal section because it is attended with less shock, and there is none of the after pain and disturbance, which is seen after the abdominal variety. It is not as dangerous as the latter, if there have been many examinations or other manipulations which might favor infection. If the baby is large and the classic Cesarean section is feared because of possible infection, then the extra peritoneal section through a low median abdominal incision is to be considered. It does not offer the same danger of rupture of the uterus in a subsequent pregnancy, because the incision is made in the lower uterine segment and cervix after separation of the bladder. The literature is full of reports of rupture of the uterus in patients who have previously been cesareanized, and this alone should be enough to put a warning into the minds of those surgeon obstetricians who, because of the extreme ease and simplicity of the operation, are thus enthusiastically solving all their obstetric difficulties.

Convulsions first appearing before labor has begun.—Convulsions are said to appear *before* labor in about 20 per cent. of all cases of eclampsia. The treatment of patients in whom the toxemia ends in convulsions is still in controversy, but in this country, immediate delivery seems to be growing in favor. Carl Braun pointed out, that the convulsions usually stopped after delivery or became less severe. Duhrssen claimed that he had this result in 94 per cent. of cases, and Ohlshausen in 85 per cent. Peterson of Ann Arbor collected a very large number of cases from the literature, and showed that immediate delivery gave much the best results.

The Strogonoff method, an expectant plan, in which chief reliance is placed upon narcotics and bleeding, is finding some advocates in Europe. The patient is placed in a darkened room, one-third of a grain of morphine is injected, a pint or more of blood is withdrawn and three hours later 45 grains of chloral are given in an enema. If the convulsions continue more morphine and chloral are given. This treatment is not attractive to me,

excepting in cases where the patient is not in surroundings suitable for immediate delivery. Such patients are often treated by forced delivery, as this has been considered an operation suitable for performance in any ranch bedroom or kitchen. It is better to try to subdue the convulsions, and prepare properly for Cesarean section, or wait till spontaneous labor settles the question, or the engagement and dilatation are satisfactory for forceps extraction.

There is another agent for controlling the convulsions where delivery cannot at once be done which has the confidence of many. I refer to veratrum viride. It is used in ten-drop doses of Norwood's tincture, hypodermically every half hour till the pulse rate is reduced to 60 per minute. Its use in my hands has been quite satisfactory and I have seen no convulsions after that pulse rate had been attained. Used in too large doses it may produce severe and long continued vomiting and this is the only bad result I have ever seen or heard of from its use.

There are those who advocate Fischer's solution for these patients when temporizing seems necessary. It is said to relieve the oedema of the brain, the cause of the convulsions, when used in amounts up to three quarts intravenously. I have never used that quantity but I have failed to control the convulsions with one quart, and have seen the patient die, and I have more confidence in the other methods mentioned. It is sometimes useful in combatting such conditions as anuria, and continued convulsions after delivery. I have seen it apparently relieve such an anuria, but for convulsions which occur after delivery I prefer bleeding and veratrum.

If the conditions are not such as to demand palliative treatment the methods of immediate delivery are to be considered. As labor contractions have not begun there is no dilatation of the cervix and perhaps it is not even obliterated. Forced delivery is no longer justifiable, as I have already suggested. There is too much damage to the maternal parts and intracranial birth traumatisms due to high forceps or version are responsible for many serious nervous diseases of infancy, such as idiocy, Little's disease, and other paraplegias and hemiplegias. The obstetrician is bound to consider the interests of the child whenever possible. Kerley says, "The obstetrician should always keep in mind that with him rests the responsibility of making a hopeless invalid or an idiot of the child he is about to deliver."

Vaginal cesarean section, better termed vaginal hysterotomy, if done at full term is subject to the same objections as forced delivery, and is a very difficult operation. Up to seven and a half months it will do very well. If there is doubt as to the period of the pregnancy, it can be arrived at approximately by dividing the height of the fundus above the symphysis in centimeters by three and five-tenths; for the fundus rises at the rate of three and five-tenths centimeters every twenty-eight days, hence it is thirty-five centimeters at full term. The length of the baby can be measured by the pelvimeter from the upper border of the symphysis to the breech after locating it by abdominal palpation. The result in centimeters is doubled and two centimeters are subtracted for the thickness of the abdominal wall. This is Ahlfeld's rule. The average length of the fully developed fetus is fifty centimeters, and this is a more certain indication of its age than its weight. As an example of the application of this rule, we will assume that the distance from the symphysis to the breech in the fundus of the uterus is eighteen and a half centimeters, which multiplied by two gives thirty-seven centimeters, subtracting two centimeters leaves thirty-five centimeters as the length of the fetus, and that is the usual length at the seventh lunar month of intrauterine life.

At full term the decision lies between the classical cesarean and the extraperitoneal variety. The latter is the safer and, like the vaginal, it does not predispose to future rupture. It should be done when possible infection is suspected. The classical section, while very successful, is more dangerous to the mother but safer for the child, and is easier of accomplishment from the technical standpoint.

Convulsions appearing during labor and after dilatation of the cervix is well advanced.—In about 60 per cent. of the cases of eclampsia the convulsions have appeared after labor has begun, and as they usually stimulate severe contractions, engagement and dilatation proceed rapidly and we have conditions suitable for forceps extraction. If there is delay in dilatation after it is fairly well advanced it may be completed manually or Duhrssen's incisions used. The operation is short: it meets all the indications for rapid delivery, and it is in no sense a forced delivery as that procedure is usually understood. Dystocia in some form may of course complicate this method of management, in which case one of the methods of operative delivery will have to be selected. The choice will be determined by the factors already pointed out in describing them, but it is well to remember that the conditions may be anything but suitable for the classic cesarean.

There is one more class of cases to be considered. I refer to those patients in whom the first convulsion appears from a few hours to several days after delivery. About 20 per cent. of eclamptics belong to this class. It is considered the most dangerous by some and the least dangerous by others. I took part in the treatment of one patient many years ago when chloroform was the accepted treatment. This was a patient of Dr. Adams who was given a few whiffs of chloroform whenever the aura of a spasm appeared, and it was kept up for two days and nights with recovery of the patient. Chloroform has no place now in the treatment of any form of eclampsia.

Case 6. Primipara, age 36. Labor due by Naegle's rule November 26th. From July 14th to November 3rd sugar was found in the urine occasionally. She had considerable nausea and vomiting during October. Feet and eyelids were moderately oedematous. No albumen was found in the urine at any time before the birth of the

baby. She ate very little because of the nausea. The blood pressure was not noted. Although she had been told to keep the bowels open she had no movement for three days before the birth. Labor pains began November 4th at 10 p. m. Membranes ruptured at 9:30 a. m. November 5th. A few whiffs of chloroform were given with each pain for the last two and a half hours of labor. One c.c. of pituitrin was given at 10:50 and at 11:30 a five-pound girl was born. The placenta was delivered normally fifteen minutes later. Two-thirds of a dram of ergotole was given per mouth. During next twenty-four hours temperature registered from 98.4 to 99.4; pulse 60 to 80 and respiration 16 to 20. She took 68 ounces of water, 14 ounces of milk and some toast and custard. She passed 40 ounces of urine. November 6th frontal headache began at 3 a. m. There was considerable edema of legs. No epigastric pain, some nausea and slight vomiting at 8:30. I saw patient at 9:30. The uterus was firm and lochia normal. At 10:30 a. m. the baby nursed and a convulsion followed immediately, lasting twelve minutes. This was twenty-five hours after the birth. The nurse gave some chloroform during the convulsion before my arrival and started a Murphy drip of salt solution. Venesection was begun at 11 o'clock, half an hour after the convulsion. When 24 ounces of blood had been withdrawn another convulsion lasting six minutes occurred. The bleeding was continued till 32 ounces had been taken. One-third of a grain of morphine was given and the pulse kept down to 60 with veratrum viride. This required 54 m. hypodermatically during the day. The veratrum was continued for two days whenever the pulse reached 70. The bowels were kept open with castor oil or Epsom salts. The diet was milk and Calso water for a few days. The edema gradually disappeared and by November 13th there was but a trace of albumen in the urine and she was passing from 40 to 80 ounces per day. Improvement was steady and she was finally able to nurse the baby successfully.

Case 7. A patient of Dr. Sampson of Berkeley with practically negative urinary findings, no pre-eclamptic symptoms except slight photophobia and very slight temporal headache. Patient aged 35, four para, previous pregnancies normal. Patient was being treated for pyorrhoea.

Baby born October 1st. Less than usual amount of blood lost. A few hours before delivery urine examination showed slight trace of albumen. Patient voided freely and seemed normal during day following delivery but in evening complained that light hurt her eyes and that head ached slightly.

Eighteen hours after delivery the nurse was attracted by patient's heavy breathing and noticed that she seemed dazed. Convulsion occurred an hour later. At second convulsion blood pressure was 120. U. S. P. tincture veratrum had no effect upon pulse. This was apparently an inert tincture. Two hours later after seven convulsions had occurred, an active Norwood's tincture was used in dose of 10 to 25 minims at intervals of 15 minutes to one hour. At the same time 26 ounces of blood were withdrawn. One slight convulsion occurred after the venesection. Patient was exceedingly restless. The pulse was kept under 80 with veratrum for several days and convalescence was uninterrupted.

Case 8. A patient of Dr. Page seen with him in consultation September 3rd, when she was about seven months pregnant. Albumen was first found in her urine August 28th, and patient's face was puffy, hands swollen and she was suffering from headaches. Blood pressure was 160.

She was put to bed and given milk and Calso, a saline laxative and five grains of diuretin three times a day. August 29th blood pressure 140, urine increased in amount but still highly albuminous. August 30th, urine decreased, albumen continued the same, blood pressure 135. Diuretin discontinued. August 31st, blood pressure 135. September 1st, blood pressure 140. September 2nd, 160, September 3rd, 165, and she had severe headache, dyspnoea and blurred vision. Dr. Page dilated the cervix with bags and delivered a live baby by version; it lived but one hour.

September 4th, severe headache, maximum temperature 99, pulse 110-140. Urine alkaline and containing a light cloud of albumen, no casts. September 5th, pulse 102-114, and in night patient had what the nurse called a nightmare. September 6th at 5:45 p. m. patient had a severe convulsion followed by stupor. Urine was alkaline but showed a marked increase in albumen over that examined the day before. Shortly after the convulsion patient was given a hypodermic of 10 minims of veratrum viride. This was repeated at half-hour intervals without much effect on pulse. It was discovered that the tincture used was inert and another specimen of Norwood's tincture was substituted at 8 p. m. and the pulse was rapidly brought down to 74. The pulse was held down below 90 for the next three days when patient was convalescent.

In this case an active tincture of veratrum viride given early evidently obviated the necessity for bleeding as it did in case 9.

Case 9. A patient of my own. Urinary findings negative before labor. Blood pressure 154. No pre-eclamptic symptoms.

A convulsion occurred three-quarters of an hour after a normal labor. Veratrum viride was given at once hypodermically and pulse brought down from 130 to 60 in one hour. Patient dazed for two hours but convalescence was normal thereafter though the precaution was taken to keep the pulse down under 70 for several days, and the patient was alkalinized.

If the pulse can be gotten down to 60 quickly with the veratrum there will seldom be need for bleeding; if however, six or seven convulsions occur, the pulse and blood pressure are less easily affected by the drug, and bleeding must be resorted to.

SUMMARY.

Be sure the patient understands and practices the well known rules of hygiene during pregnancy. Examine urine every two weeks and take blood pressure at least once per month; oftener if it is shown to be rising. Eliminate, diet, and alkalinize in the presence of albumen in the urine. If in spite of this treatment the albumen increases, the blood pressure continues upward and other pre-eclamptic symptoms are present and becoming more severe, start labor with Voorhees bags. Do not delay too long. Do not demand too many symptoms before acting. If convulsions come on before eight months, in absence of labor, do vaginal hysterotomy if conditions are favorable, especially in multiparae. After eight months do abdominal cesarean section, unless labor is well advanced with dilatation of cervix and good engagement of the head, when forceps may be used.

Convulsions first occurring after labor are treated by most obstetric authorities by the abstraction of twenty to thirty ounces of blood. As adjuvants to this treatment may be mentioned veratrum, alkalies and morphine.

RADIUM: ITS LOCAL APPLICATION AS A THERAPEUTIC AGENT—WITH CASE REPORTS.*

By REX DUNCAN, M. D., Los Angeles.

Radium is an element which owes its therapeutic properties to certain rays, which during the process of its disintegration are being constantly and continuously emitted. These rays, known as alpha, beta and gamma rays, differ in their penetration, chemical and physical characteristics and in their effect upon body tissues.

The alpha rays are of low penetration and seldom penetrate the walls of the container, consequently they are of no therapeutic value.

The beta rays are heterogeneous and less penetrating than the gamma rays (see table No. 1), but have great value in the treatment of a large group of superficial conditions.

The gamma rays are more homogeneous and of great penetration, passing through as much as 10 cm. of lead. Their absorption by the tissues is well shown in table No. 2.

TABLE NO. 1, SHOWING ABSORPTION OF BETA RAYS BY TISSUE.[1]

Thickness of Tissue.	Intensity.
0	100
.65 mm.	85.5
1.95 "	62.0
3.25 "	43.0
4.55 "	26.3
1.00 cm.	6.2

TABLE NO. 2, SHOWING ABSORPTION OF GAMMA RAYS BY VARIOUS SUBSTANCES.[1]

Substance.	Thickness required to reduce the intensity to one-half.
Water	20.4 cms.
Serum	18.3 "
Blood	14.4 "
Muscular tissue	7.6 "

Without entering into a detailed discussion of the subject at this time I wish to mention briefly wherein the rays from radium differ materially from the x-rays (Coolege tube).

First.—Rays similar to the beta rays of radium are not emitted from the x-ray tube, consequently any therapeutic effect peculiar to the beta rays are not obtainable from the x-rays.

Second.—Russ[1] states if a comparison be made using lead as a filter, it is found that very hard x-rays emitted from Coolege tube under a spark gap of 30 cm. (points) and screened by nearly 2 mm. of lead and 7 mm. of aluminum have about 1/30 of the penetrating power of the gamma rays of radium. If, however, the comparison be made with tissue as a filter under the same conditions, the x-rays have a penetrating power of about ¼ of that of the gamma rays.

Third.—Numerous histological studies and clinical observations have demonstrated a marked difference in the reaction of the tissues to the rays. Clinically we not infrequently see an apparent stimulation of malignant growths from x-ray exposure, due perhaps to insufficient penetration of the individual cells.

Fourth.—A very significant fact is the promptness with which x-ray burns and epitheliomata yield to radium radiation.

Fifth.—A very valuable feature of the application of radium is the ease and accuracy with which it may be placed and retained in contact with the desired area, thereby permitting of a maximum radiation of the pathological tissues with a minimum of radiation of normal tissues, and especially is this true in treating conditions within body cavities.

THE EFFECT OF RADIUM RAYS UPON THE TISSUES.

The normal tissues differ in their susceptibility to radiation, and there is even a greater difference in the susceptibility of the various pathological tissues and processes.

Radium has a marked selective action upon certain pathological tissues. Generally speaking, normal tissues are more resistant to radiation than pathological tissues. The changes produced or reaction resulting from radiation will depend entirely upon the dose and technic employed and the histopathological characteristics of the tissue. I wish to emphasize the fact that curative results may be obtained without associated destructive changes, and the effect is in no way similar to that produced by cautery, caustics, or similar agents.

The histological changes occurring in carcinoma are as follows: There results about ten days after the application of radium an enlargement of the carcinoma cells, a hyperchromatosis and a pyknosis of the nuclei. This is followed by karyolysis, karyorrhexis, cytolysis and cell detritus, resulting in the absorption of the cellular and nuclear debris by phagocytes, and the presence of macrophages and microphages. The last stage is the stage of connective tissue formation, proliferation and scar formation, completing the histologic cure of cancer.

In sarcoma, the size of the body and nuclei of the large cells decrease, neoplastic elements elongate and they eventually assume the form of large embryonic tissue cells. The cell mass assumes the character of myxomatus tissue finally resulting in a fibrous tissue.

In addition to the influence of the rays upon the malignant cells, the connective tissue contracts, hardens, and perhaps proliferates. As a result, lymphatics and smaller blood vessels are permanently blocked, and the dense scar produces a condition of starvation of the growth. This together with the direct effect of the rays upon the endothelial lining of the blood vessel, which causes them to swell and obliterate the vessel, accounts for the effect of radium in angiomata, myomata, and a large number of benign conditions.

Gaylord,[2] quoting certain experiments conducted by Murphy, believes that as a result of exposure to radium there has developed immunity to can-

* Read before the Forty-sixth Annual Meeting of the Medical Society of the State of California, Coronado, April, 1917.

[1] Colwell & Russ: Radium, X-rays and the Living Cell. Page 63. Published by B. Bell & Son.

[2] H. R. Gaylord: Surg. Gynec. and Obst., 1917, XXIV, 94.

cer, and states that they can offer certain evidences to show that radium exercises its curative effects through immunity. From this he reasons that the therapeutic effect of radium is in a large part secondary and not alone a direct action of radium upon the tumors.

Radium, in sufficient quantities, has a marked germicidal effect, as shown by experiments conducted by Chambers and Russ, and cited in table No. 3.

TABLE NO. 3, SHOWING TIME REQUIRED FOR STERILIZING EFFECT PRODUCED BY .5 MILLICURIE PER C.CM.

Organism.	Time.	
B. coli communis..	1 hour 5 min.	The number of organisms in the suspension was approximately one million per c.cm.
Staph. aureus	2 hours 0 "	
B. pyocyaneus	4 " 0 "	
B. anthracis	3 " 10 "	
B. tuberculosis ...	3 " 20 "	

DOSE AND TECHNIC.

The therapeutic action of radium depends on (1) the amount of radium element employed, (2) the method of screening, (3) the extent of and the time of the exposure, and (4) the distance maintained between the radium and the area treated. The dose, or rather the quantity and quality of the rays employed, will depend entirely upon the character, location and extent of the condition to be treated.

It is essential that a sufficient quantity of radium be used, and desirable that the applicator be placed and retained in direct contact with the area to be treated.

A homogeneous raying of the pathological tissue must be secured and normal tissues protected.

For the proper application of radium, in addition to appropriate screens, a considerable number of instruments and appliances is necessary, and many cases will require the construction of some special device for its application.

The technic of application will depend upon the location and character of the condition to be treated, as well as upon the amount of radium, screening and time of application. Healthy tissues should be thoroughly protected, though it is possible with proper technic to treat subcutaneous and deep-seated conditions with but little temporary and no permanent injury to the skin. Superficially, it is usually possible to secure and maintain the desired approximation with but little difficulty.

For application within the mouth I have made use of various dental appliances and devised special apparatus, as the case required.

By the use of the laryngoscope and the oesophascope, radium applicators may be accurately placed within the larynx, trachea, and oesophagus, where after withdrawal of the instruments they are usually retained with little difficulty.

Janeway, after doing a gastrostomy, has devised an ingenious method of applying radium to the lower end of the oesophagus and stomach, and in a personal communication reports very favorable and encouraging results.

In the treatment of certain types of tumors I have received most pleasing results by placing the radium within the tumor substance. For this purpose I have had made hollow platinum needles, within which are placed the tubes of radium. These needles are 3 mm. in diameter and about 3 cm. in length, with walls 5/10 of a mm. in thickness.

For applying radium within the bladder (see figure No. 1), I have devised a platinum needle in which a tube of radium may be contained. Using a slightly remodeled Burger's operating cystoscope the needle may be placed under direct vision into the tumor substance. The cystoscope may then be withdrawn and the radium allowed to remain for the desired time.

Within the rectum and vagina (see figure No. 2), it is possible to so place the radium that the desired area receives the maximum of radiation, and surrounding healthy tissues are adequately protected.

Strict asepsis is of the utmost importance in the application of radium.

RADIUM THERAPY.

I will not attempt to cover that most fascinating and ever broadening field of radium therapy, but wish to emphasize a few common conditions in which radium is of unquestionably superior value, and present a few abbreviated case reports that suggest the broad scope of radium therapy.

Epitheliomata: A thorough review of the literature, as well as my personal observation in the treatment of a large number of superficial epitheliomata, convince me that a larger percentage of cures may be obtained by the use of radium, and with less disfigurement, than by all other methods of treatment combined. Especially is this true in epitheliomata near the eye, nose, lip, or where great disfigurement would follow surgical removal. Figures number 3 and number 4 are typical of the results obtained in this group of cases. In recurrent cancer, or where extensive destruction has occurred, I have received most excellent results.

Uterine Myomata: I have treated a number of cases of uterine myomata and fibroids with marked reduction in size or complete disappearance of the tumor and permanent relief of the symptoms. Case No. 70, reported below, is typical of this group of cases.

Inasmuch as the results are due to the direct action of the rays upon the uterus rather than their effect upon the ovaries (see figure No. 5), normal menstruation may be conserved in a large percentage of cases. In several cases of metrorrhagia and menorrhagia of obscure origin, I have received most excellent results. In this condition, as well as in uterine myomata, radium is far more conservative and no less effective than surgical treatment.

Carcinoma Uteri: During the past year I have treated more than 20 cases of inoperable and recurrent carcinoma of the uterus. (At another time these cases will be reported in detail.) All of these cases received marked benefit from the treatment, and a number are now free from all evidence of involvement, though it is too early to speak of them as cured. Schmidt,[3] Kelly and

[3] H. Schmidt: Surg. Gynec. and Obst., 1916, XXIII, 191.

Burnham,[4] and others, report clinical cures in more than 25% of a large number of cases treated by them. From my personal experience and a thorough study of the literature, I believe that the following conclusions are warranted:

First.—The results of radium therapy in inoperable and recurrent carcinoma surpass those of any known therapeutic agent.

Second.—Radium not only relieves the pain, hemorrhage and discharge, but indirectly also improves the general health and condition of the patient.

Third.—Border line cases and operable cases should receive a preliminary course of radiation.

Fourth.—Operative cases should be subjected to post-operative prophylactic radiation.

In closing, I wish to emphasize that in addition to sufficient radium and adequate appliances, a thorough knowledge of its chemical and physical properties, histological action, in addition to considerable experience, are essential to the proper application of radium.

Case No. 81. S. R. Male, age 34. Mechanic.

Diagnosis: Tubercular sinus, following resection of the knee joint. Referred by Dr. W. W. Richardson.

Present Condition: Four months previous to treatment, right knee joint had been resected because of tubercular involvement. There persisted a sinus extending from the joint downward on the inner and anterior surface of the leg about 5 inches in length, with characteristic discharge. Bismuth paste and other treatment had been employed without benefit.

Treatment and result: Seven treatments using 55 mg. of radium were employed. The radium, screened with platinum, was inserted directly into the sinus. Following the second treatment there was a diminution in the amount of the discharge and improvement was rapid. In one month from the first treatment the discharge had ceased, the sinus was closed and apparently healed. Eight months have since elapsed and there is absolutely no evidence of involvement. The condition is apparently cured.

Case No. 122. Mr. A. S. Male, age 24.

Diagnosis: Lupus, involving skin and conjunctiva, lower left eyelid. Referred by Dr. Granville MacGowan.

Family and previous history: Negative.

Present condition: General physical condition good. About one year previous to examination lupus began on cheek under left eye, gradually extended until it involved an area about 5 cm. in diameter, including lower lid and conjunctiva. The condition had yielded satisfactorily to other treatment with some scarring, with the exception of margin and conjunctiva of lower lid. Cornea somewhat inflamed.

Treatment and result: Four treatments using 25 mgrms. of radium were employed, resulting in rapid improvement and complete cure in about one month. There resulted no disfigurement from the radium treatment, nor injury to the cornea.

Case No. 114. Miss M. C. Age, 24. Case seen with Dr. Carl Kurtz.

Diagnosis: Fecal fistula, following appendectomy.

Present condition: About eight months previous to examination, patient was operated on for an acute gangrenous appendicitis, followed by drainage, which resulted in a fecal fistula. Numerous attempts, including bismuth paste and various operative procedures, were employed to close the fistula, without results.

Examination: Tortuous canal about 7 cm. in depth in right iliac fossa exuding characteristic discharge and occasionally gas and fecal matter. Considerable rigidity and tenderness on pressure in right iliac region.

Treatment and results: Two treatments, employing 40 and 25 mg. respectively, were given. In ten days all discharge had stopped, adjacent tenderness was markedly improved and the fistula apparently closed. More than one year has since elapsed and the fistula has remained healed. All local evidence of involvement has long since disappeared, and the patient is enjoying splendid health.

Case No. 72. Mrs. W. C. K. Age, 46.

Diagnosis: Exophthalmic goiter.

Family and previous history: Negative, excepting occasional attacks of "so-called" indigestion.

Present condition: About three years previous to examination patient noticed slight enlargement of the neck, discomfort from pressure of collars, etc. Normal neck measurement 13½ inches. Neck continued to enlarge slightly on right side and more on left, until neck measurement reached 15¾ inches. There has developed gradually, increasing the nervousness and tremor, tachycardia, dyspnea and generally impaired health, marked increase in gastric disturbances and slight exophthalmos.

One month after beginning treatment there was marked improvement in the patient's general condition and slight decrease in the size of the tumor. Two months after treatment the enlargement of the right lobe had disappeared and marked reduction in the size of the left lobe. Neck measurement 14¼ inches. Pulse returned to nearly normal. Nervousness and dyspnea disappeared, and patient was apparently well. All pressure symptoms had disappeared.

Case No. 105. Male, age 7. Referred by Dr. H. P. Barton.

Diagnosis: Cervical tubercular adenitis. Bilateral.

Family history: Parents well, three brothers well, no history of tuberculosis in family.

Previous condition: Chicken pox, measles several years ago with satisfactory convalescence, adenoids and tonsils removed one year previous to examination. Apparently in normal condition though not especially robust. About two months previously mother noticed swelling of the glands of the neck on both sides which gradually increased in size, also impaired general health and afternoon temperature.

Present illness and examination: Child anemic, under weight, morning temperature normal, afternoon temperature maximum 100.

Examination: Throat and chest negative. Superficial cervical glands on both sides swollen, superior group hard and as large as a hen's egg.

Treatment: Eight treatments using from 60 to 100 mgrms. of radium element.

Results: Within two weeks the glands reduced over 60%, and in five weeks were not palpable. Marked improvement in general condition.

Case No. 101. L. G. Female, age 70. Referred by Dr. John B. Barrow.

Diagnosis: Melano carcinoma. (Diagnosis made by microscopical examination of section.)

Present condition: About six weeks previous to examination patient noticed several small papules on skin over second joint dorsal surface right thumb. Condition grew rapidly, and on examination presented more or less ulcerated and markedly indurated new growth about 2 by 4 cm. in diameter.

Treatment: Five applications employing 90 mgrms. of radium element. Two months later reaction had subsided and condition is apparently well. There is a soft pliable scar which can scarcely be told from normal skin.

Case No. 89. Y. W. T. Male, age 72. Referred by Dr. Charles R. Jennings.

Diagnosis: Epithelioma of the lip.

[4] Kelly & Burnam: Jour. Amer. Med. Assn., 1915, LXV, 1874.

FIGURE No. 3, CASE No. 76.
Squamous cell Epithelioma involving lower eye lid.

FIGURE No. 4, CASE No. 76.
Six weeks after Radium treatment. Condition apparently cured. No impaired function or disfigurement, except absence of lower lashes. Lachrymal duct open.

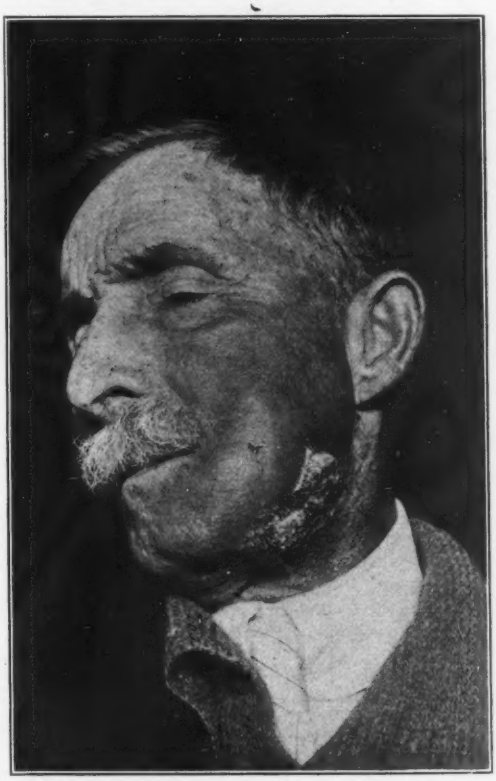

FIGURE No. 6, CASE No. 108.
Extensive recurrent Carcinoma, involving maxillary bone and over-lying tissues, and suppurating carcinomatous tissue extending through skin as shown. Ulcerated, soft tumor mass fills left half of mouth.

FIGURE No. 7, CASE No. 108.
All local evidence of involvement absent. No apparent metastasis, and marked improvement of general condition of patient.

FIGURE No. 8.
Squamous cell Epithelioma. Recurrent after surgery, x-ray and various methods of treatment.

FIGURE No. 9.
Permanent cure six weeks following Radium treatment. (Note excellent cosmetic result.)

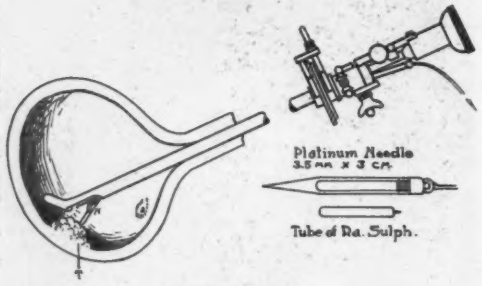

FIGURE No. I.
Insertion of platinum needle containing Radium into bladder neoplasm, using operating cystoscope.

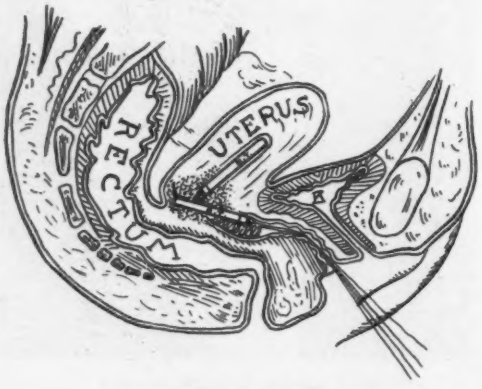

FIGURE No. 2 A.
Radium applied Carcinoma Uteri, involving vaginal walls.

FIGURE No. 2 B.
A. Carcinoma of the cervix involving the anterior vaginal wall.
B. Radium applicator with lead to protect rectum.

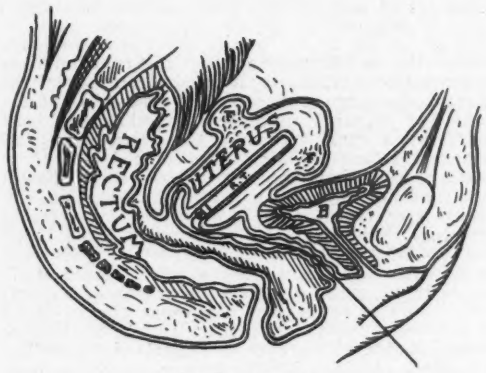

FIGURE No. 5.
Method of treating Uterine Myomata with Radium.

Family history: Negative.
Previous history: Negative.
Habits: Has chewed tobacco for past 56 years. Does not smoke nor use alcoholics.
Present condition: General health and physical condition excellent. About four years previous to examination noticed small abrasion right side lower lip, which would not heal and gradually increased in size, slightly sensitive. Examination reveals area nearly 1 cm. wide and 2 cm. long denuded of mucous membrane, slightly ulcerated, indurated and exuding slight serous discharge, glands not palpable.
Treatment: Four treatments 2 hours each, using 55 mgrms. of radium element.
Results: After about 6 weeks the reaction had completely subsided, and the condition was apparently cured. No disfigurement.

Case No. 70. Mrs. D. A. J. Age, 36. Referred by Dr. John Mac Daniel.

Diagnosis: Uterine Myomata.

Present condition: Married, two children. Youngest six years. General condition weak and anemic. Weight 98 pounds. More or less backache, and painful menstruation since birth of last child. Past year, menstruation regular but profuse. Past two periods marked hemorrhage. Examination reveals slightly irregular tumor mass, on posterior wall of uterus, about three inches in diameter.

Treatment and result: August 25, 1916, patient received four intrauterine applications, employing from 50 to 90 milligrams. September 13, 1916, careful examination revealed no irregular nor palpable tumor of the uterus. Preexisting pelvic tenderness had disappeared. There had also resulted marked improvement in the general condition of the patient. December 22, 1916, on examination it was found that the uterus had returned to normal size, no irregularity, the cervix normal size and color. On October 1, 1916, patient had a slight show, lasting about 2 days, but since, there had been a complete amenorrhea. The general health of the patient has continued to improve. When last seen, June 1, 1917, was apparently normal.

Case No. 110. Mrs. J. G. B. Widow, age 60. Referred by Dr. Arthur Domann.

Diagnosis: Recurrent carcinoma, involving axillary lymphatics.

Present condition: One year previous to examination right breast and axillary glands were removed on account of early carcinoma of the breast. Post-operative prophylactic x-ray treatments were given. About six months later small nodule was noticed in the axillary region, which gradually increased in size until at the time of examination there presented a mass about 5 inches in length, 2 inches broad and correspondingly thick. No ulceration and not adherent to the skin. General condition of the patient fair.

Treatment and result: First treatment consisted of three applications, employing 55 to 100 mgrms. of radium, screened in platinum needles, which were inserted directly into the tumor mass. Absorption of the tumor began promptly, and in six weeks had reduced to about one third the original mass. There also resulted considerable improvement of the general condition of the patient. A second course of treatment was then given, which in about one month resulted in total absorption of the tumor and continued general improvement. In this case all evidence of involvement had disappeared, and some months later patient is apparently well.

Case No. 140. Miss V. McC. Age, 19. Referred by Dr. Clarence Toland.

Present condition: Congenital angioma, left side and end of tongue, which has increased in size with the growth of the patient and at the time of examination was about one inch thick by about one and one-half inches in diameter.

Treatment and result: Five treatments employing 40 to 90 mgrms. of radium were given. Seven weeks later the angioma had disappeared, and the tongue was of normal color, size and contour.

Radium seems to exert a specific effect in both deep and superficial angiomata.

Case No. 108. J. M. P. Male, age —. Figures 6 and 7. Referred by Dr. Clarence Toland.

Present condition: About two years ago patient was operated on for an early carcinoma involving the buccal mucous membrane within the left side of the mouth. The condition promptly recurred, was again operated and recurred. Cautery, x-ray, etc., have been used without benefit. Patient has lost 25 lbs. in weight in the last three months, great difficulty in eating and limited to soft and liquid diet, considerable pain, headache and general toxic condition.

Examination: Extensive carcinoma involving the left inferior maxillary bone and overlying tissues, and presenting large ulcerated and soft tumor which fills left half of mouth and involves adjacent mucous membrane. Tumor has broken through the skin in two places where there are small masses of suppurating carcinomatus tissue.

Treatment and result: Treatment was begun on January 25, 1917, and eight treatments were given, using from 70 to 100 mgrms. Both local and general improvement was prompt and marked, and by February 17th, the swelling and tumor mass was reduced to almost normal. Patient had gained 7½ lbs. in past 10 days, and was able to eat with little difficulty, and pain much less severe. Several additional treatments were given to localized areas. April 20th, examination revealed no local evidence of involvement, and there has resulted marked improvement in the general health of the patient.

Case No. 59. Mrs. H. S. C. Age, 55. Referred by Dr. A. J. Scott, Jr.

Diagnosis: Infiltrating papillo carcinoma of the bladder.

Present condition: Patient gives long history of bladder trouble. Six months previous to my examination, because of pain, hemorrhage, frequent urination and impaired general health, patient had consulted and been examined by a physician, who on vaginal examination found a tumor on the left side, lower abdomen. Patient at that time refused a cystoscopic examination.

Examination: Six months later, cystoscopic examination revealed infiltrating papillomatus tumor surrounding and concealing opening of left ureter, ulcerated and bleeding after slightest trauma. Vaginal examination reveals tumor adherent to anterior vaginal wall and bladder, about three inches long by one and one-half inches in dia-

meter. Microscopical examination of tissue shows a papillo carcinoma.

Treatment and result: Three treatments were given, employing 100 mgrms. of radium element. Radium was placed under the tumor in the vagina, and my special platinum needle containing radium was inserted into the tumor mass through a slightly modified Burger's operating cystoscope. After placing the needle the cystoscope was withdrawn, and the radium allowed to remain for the desired time. A few days following treatment, patient began passing fragments of tumor with the urine, this continued for about three weeks with more or less pain and at times some bladder spasms. Seven weeks after the first treatment, cystoscopic examination by Dr. W. B. Dakin failed to reveal any evidence of bladder involvement. Vaginal examination negative and there were no symptoms of involvement elsewhere. The general condition of the patient has also been greatly improved, and the case is apparently cured.

Case No. 76. K. McD. Female, age 45. (See figures 3 and 4.) Referred by Dr. Bogue.

Diagnosis: Squamous cell epithelioma. (Confirmed by section and microscopical examination.)

Present condition: About six months before examination patient noticed small nodule on margin left lower lid, extending to opening of lachrymal duct and rapidly increasing in size.

Examination: Ulcerated tumor about 1.5 by 1 cm. in diameter, on margin of left lower lid. Marked conjunctivitis.

Treatment and result: Treatment consisted of three applications of 55 mgrms. of radium. Six weeks later tumor had entirely disappeared and condition apparently cured. No impaired function nor disfigurement, excepting absence of lower lashes. Lachymal duct open.

Case No. 96. F. C. Male, age 48.

Diagnosis: Endothelio sarcoma (confirmed by section and tissue examination).

Family and general history: Negative.

Present condition: About one year previous to examination patient had three lower right molars extracted. Teeth had been badly decayed and giving trouble for some time. Some soreness remained, and for about eight months patient had been aware of a tumor in this location which had gradually increased in size and recently had become painful when eating.

Examination: Tumor about 7 cm. long and 2 cm. in diameter, involving right inferior maxillary bone and extending into oral cavity. Small ulceration of mucous membrane at apex of tumor.

Treatment and result: Platinum needles containing 50 mgrms. of radium were inserted into tumor substance, and 40 mgrms. placed over tumor. Tumor promptly began to decrease in size, and after eight weeks had completely disappeared. There is no evidence of involvement elsewhere.

Case No. 123. Mrs. W. G. Married. Age, 44.

Previous history: Married at 19, four miscarriages, self induced at about two months term, last 10 years ago. No pregnancy since. Menstral history normal. Until about six months previous to examination general health was good.

Present condition: About six months previous to examination menstral period lasted about two weeks with profuse hemorrhage, next two periods same, and last three months continuous flowing, at times profuse, also increasing odorous discharge, loss of weight, weak and anemic. Red blood count 2,300,000, hemoglobin 42%, leukocytes 6,000.

Examination: Offensive odorous discharge, large cauliflower mass involving cervix and extending into adjacent vaginal walls, induration extending down two-thirds of the anterior vaginal wall, tumor friable and bleeds readily.

Treatment and result: Four 12-hour treatments using 87 mgrms. of radium were given, with an interval of 24 to 72 hours between treatments. Before the last treatment was given hemorrhage had practically stopped, marked decrease in the odorous discharge, and sufficient absorption of the mass had occurred to make it possible to locate the cervical canal. In less than two weeks all hemorrhage and discharge had ceased and there was a marked improvement in the general health and condition of the patient. Examination six weeks later revealed no evidence of involvement excepting slight redness of the cervix. Red blood count 4,700,000, hemoglobin 85%. Additional prophylactic treatment was given. While it is too early to speak of this case as cured, a number of months have elapsed without any evidence of recurrence, and the patient enjoys apparently normal health. This case is typical of the palliative effect obtained by the proper use of radium in a very large percentage of cases. Statistics show more than 25% of clinical cures after one or more years have elapsed.

THE MALARIA PROBLEM IN THE RICE FIELDS.

By STANLEY B. FREEBORN, University of California.

The advent and phenomenal growth of the rice industry in California has introduced a serious public health problem. The growing of rice demands that the entire acreage under cultivation be flooded from approximately June 1st to October 15th to a depth of about five inches with water, stagnant or in a gentle current.

Unlike the malarial mosquitoes of other rice-growing districts, the Anophelines of the Sacramento Valley find their optimum breeding grounds in these fields flooded for rice culture. As a result, mosquitoes, and consequently malarial cases have increased in direct proportion to the growth of the industry.

The summer of 1912 saw the first commercial planting of rice in California. This was at Biggs in the Sacramento Valley, and totalled 1400 acres. Each year since has shown at least a hundred per cent. increase until this year's estimate places the acreage of rice at 80,000. Of this the Sacramento Valley contributes 70,000 acres and the San Joaquin 10,000.

Agriculturally, the production of rice is an extremely fortunate venture as it utilizes land made unsuitable for any other crop either on account of nitrogeneous insufficiency due to previous croppings or on account of unfavorable texture. The annual rice consumption of six pounds per capita far exceeds the domestic supply. This fact coupled with a fairly heavy protective tariff and the knowledge that most of the land used for rice is worthless for any other crop adds millions to the state's wealth this year and insures a permanent place among California's agricultural projects for rice culture.

The attractive returns of the industry have

caused a headlong rush on the part of the ranchers to put their land into rice. This mania for speedy and lucrative returns has left its mark on all branches of the industry. Already many ranchers by their utter disregard of all agricultural tenets, such as crop rotation and seed selection, have stripped the soil of nourishment and clogged the fields with weeds. The same haste and carelessness has characterized the use of water. The irrigation ditches are anything but water tight and the inevitable result is that the surrounding fields have been converted into veritable bogs. Almost without exception the roadsides are bordered, and in some cases actually covered, with stagnant pools that are developing myriads of malarial mosquitoes every month. It is a conservative estimate that 50 per cent. of the mosquitoes of the rice field country find their breeding places in these inexcusable situations outside the fields under cultivation.

There are two species of Anophelines breeding in the rice fields and throughout the Sacramento Valley. The most common one, *Anopheles occidentalis*, is a medium sized, brownish mosquito with four distinct black spots on its wings. This species is known to be a malaria carrier. The other, *Anopheles pseudopunctipennis* looks very much like the former, except that the wings are mottled and marked with two yellow spots on the anterior margin. This species is not generally included in the malaria carrying group but circumstantial evidence seems to incriminate it.

In midsummer, twelve days generally suffices for the mosquito's growth from egg to adult, lengthening to eighteen or twenty days in the spring and fall. About a week after emerging from the pupa or "tumbler" stage in which the larva transforms into the adult, the female mosquito lays approximately 125 eggs. This process is in constant progress from March to November in the Sacramento Valley.

All the rice field mosquitoes pass the winter as unengorged adults, i. e. adults that have not had a suck of blood. Hence it will be seen that the plasmodium must be carried over the winter in the body of human beings owing to the fact that all infectious mosquitoes must of necessity have a meal of blood in order to become infected and are thus unable to pass through the winter.[1] If, therefore, all persons harboring gametes could be cured during the winter, the mosquitoes emerging from hibernation in the spring months would have no sources at which to become infected and malaria would be eliminated from the community.

In this land of personal liberty it is impracticable, however, to bank our hopes on such a procedure no matter how strongly it is urged or how efficient its result. Another method of prevention is to control the mosquitoes, for in the absence of Anopheline mosquitoes malaria cannot be transmitted from person to person and the disease would be stamped out with the recovery of those already infected. Both of these practices,—the winter control of gamete carriers and the control of the mosquitoes, have their ardent proponents, but the ideal system seems to rest in the careful combination of both.

The control of the rice field mosquitoes is the most difficult problem that has yet been encountered in the work of mosquito abatement. At the present time there is no larvicide known that can be safely and economically introduced into the irrigation water to kill the larvae present. Oil, the usual larvicide, will kill the rice plants as speedily as it will the mosquito larvae. Salt, although efficient in controlling fresh water mosquitoes, will cut down the rice yields and render the land unfit for further use. Vegetable larvicides are at once too expensive and inefficient to consider. Among the natural enemies, fish and dragon flies are the most important. The former are handicapped by the irrigating systems and the shallowness of the water to such an extent that at present their economic value as mosquito feeders is almost negligible. Dragon flies undoubtedly catch a great number of adult mosquitoes but their life cycle requires an entire season and their brood is comparatively small. In short, they can be looked upon as a check, but doubtfully as a control.

The breeding of mosquitoes outside the rice fields in pools caused by seepage is, however, inexcusable. In the first place, careful and intelligent construction of the irrigation ditches would do away with the majority of these breeding places except where the water table has been raised to the surface, and secondly, those pools that would not be eliminated by careful construction could, in a majority of cases, be drained or filled. All these expedients failing, surface oiling with a fuel oil of about 28 degrees Beaumé will destroy all the larvae present at that time. Oiling, however, must be repeated at intervals of two weeks throughout the breeding season.

The water is turned into the fields about June 1st. The mosquitoes, however, have been breeding in available pools since March or sometime earlier. Every mosquito destroyed prior to the irrigation of the rice fields means the cutting off of its countless progeny that would otherwise breed unmolested in the flooded fields throughout the season. Then, too, at the end of the season, the mosquitoes breed for a month or more in neglected pools after the water is drawn from the fields, producing the adult mosquitoes that overwinter and start the next season's crop. It seems plain, therefore, that if an ardent anti-mosquito campaign were waged before the water is turned into the fields in the spring and after it is drained off in the fall, together with the control of outside pools during the flooded period, that the mosquitoes left to start the rice field generations and hence the number of malarial cases, would be greatly reduced in number.

Malaria bearing mosquitoes seldom travel more than 500 yards from their breeding places and after their first suck of blood will bite only at dusk or at night. Thus it will be seen that persons whose occupations or residence takes them into

[1] Mitzmain, M. B. Public Health Report, Vol. xxx, No. 29, July 16, 1915, of U. S. P. H. D.

the rice field districts at dusk or at night should depend on careful quinine prophylaxis in conjunction with tightly screened dwellings and veils.

SUMMARY.

1. The cultivation of rice which demands shallow, practically stagnant water throughout the summer months, has increased the number of mosquitoes and malarial cases in proportion to the phenomenal growth of the industry.

2. Fifty per cent. of the malarial mosquitoes are breeding in pools adjacent to the rice fields.

3. The mosquitoes breed in neglected pools for two months or more before the rice fields are flooded and for another month after the water is drained from the fields.

4. The solution of the malaria problem in the rice fields rests to-day on (1) the elimination of all breeding places outside the rice fields before, after and during the time the fields are flooded, and (2) thorough quinine treatment during the winter months in conjunction with quinine prophylaxis, and careful screening during the months when mosquitoes are prevalent.

COMMON ERRORS IN DIAGNOSIS OF SYPHILIS OF SKIN AND MUCOUS MEMBRANES.*

By GEORGE D. CULVER, M. D., San Francisco.

Syphilitic lesions of the skin and mucous membranes are often of more than ordinary interest. Many persist through months or years without treatment or even in spite of indifferent antisyphilitic treatment. Some simulate other conditions so closely that no wonder incorrect diagnoses are made.

Even with excellent laboratory assistance in diagnosis it is possible for atypical lesions to run the gauntlet and escape proper treatment for a long time. The keenest observer may fail to recognize a lesion that when seen later may stand out as typical. Syphilis, though showing itself in a great variety of forms, tends always to types of eruption, depending largely upon the location of the lesion. This repetition of type in definite areas is most interesting and often helpful toward a correct conclusion.

The natural dependence of the diagnostician upon good laboratory proofs tends to make him rely less upon the clinical picture. This leads to error in both positive and negative conclusions. Our first clinical impressions, if the foundations are sound, are often of greater value than technically determined conclusions if those conclusions fail in absolute positiveness. In no other disease in a small percentage of cases are the technical findings more apt to mislead than in syphilis.

This is not meant to be an exhaustive discussion. In such a big subject as syphilis it is possible to mention in a short paper only a few of the most common errors. I have, therefore, limited my remarks to actual experience.

As to the initial lesion of syphilis, failure to recognize a chancre is still frequent. This is especially true of extragenital chancre. An ugly, hard, persistent sore, located anywhere extragenitally, may be a chancre even if as unusually placed as upon the instep or an eyelid, or the back of the neck. A not uncommon location is upon the lips, where usually it is a rapidly growing, ugly looking sore which ulcerates, and looks and feels much like a swiftly developing epithelioma. As a rule it has the same cartilaginous hardness, and the same central ulceration. It may involve the whole lip. Nevertheless, though the mimicry of chancre to epithelioma may often be close, an error should be avoided. Any large hard ulcer of a lip that has been present not longer than two months, usually in a young person of the age when such a location of infection would not be unlikely, and which is accompanied by swollen lymphatic nodules, must be regarded as possibly a chancre. I recall an instance of a man with a chancre of the upper lip, which was so slow in yielding to treatment that he went elsewhere for advice, and was persuaded to have it cut out. It promptly sprang up again, and he returned for further internal treatment, which was finally successful. The mouth is a situation in which it is easy to err in a diagnosis. Two instances in which the tonsil was removed because of chancre, in which later evidence of syphilis was convincing, have come to my attention within the last few months. In one case there was a reappearance of the indurated primary ulcer in the tonsillar site after removal of the tonsil. An unusual feature of this case was the appearance of the roseola upon the soles and nowhere else. It is important to differentiate a syphilitic ulceration of the tonsil, whether primary or gummatous, from Vincent's angina, which can give an almost identical picture. In the latter condition the microscopical findings are so definite as quickly to dispel any doubt.

I saw an instance of an undiagnosed primary lesion of the lower gums which was so extensive as to result in the removal of all the lower teeth. It was five months before a correct diagnosis was made. A single gummatous ulcer of the tongue may easily be mistaken for a chancre. A chancrous ulcer is usually of more marked cartilaginous hardness, and the base and walls look more active, giving an impression of an acute inflammatory process, while the edges of a late ulcer are either steep and punched out looking or undermined, and the base is gently raised, flattened and a duller red. What may make it more puzzling is the fact that enlarged lymphatic nodules under the jaw are not an unusual accompaniment of late lesions in the mouth, and when present they are likely to be tender. The lymphatic inflammation is in all probability due to secondary infection in the open wound. This was eminently the case in an instance recently seen, in which the lesions were situated on the upper surface of the tongue tip, a situation peculiarly exposed to irritation and friction against the front teeth.

A very small sore on the penis not unlike a few broken vesicles of herpes simplex and without perceptible induration, may prove to be a chancre. Cauterization of such a sore should be inflexibly

* Read before the San Francisco County Medical Society, August 1, 1916.

avoided pending a positive conclusion. One error such as the following should make the physician extremely cautious:

A man with a non-indurated sore upon the glans penis sought advice. He was fully convinced the sore was a chancre. Five physicians, including myself, tried and almost succeeded in persuading him it was not. Repeated search failed to demonstrate the treponema pallidum. Wassermann tests were made, and different technicians reported first a slightly positive, then a positive, and finally a strongly positive reaction during the short period of five days, the strongly positive reaction appearing thirty-one days after the sore was first noticed.

The tendency to misinterpret a syphilitic roseola is less strong than the reverse attitude of assuming a drug eruption or a skin manifestation of one of the more innocent diseases as being syphilitic. The former error, however, is not uncommon. The fact that not infrequently a positive Wassermann report is given in non-syphilitic conditions makes it still more serious and increases the liability to the accident. For instance, a young man with gonorrhea of five weeks' duration presented a macular rash of quite general distribution, and his blood serum was reported as giving a positive Wassermann. It was not a drug eruption, the rash was more upon the surface, and of a less definite character than a roseola, not the discreet rosy blotches of syphilis, which appear as if delicately painted just beneath the superficial layers of skin. It disappeared within three days. The rash and possibly also the Wassermann reaction were from intestinal intoxication.

Pityriasis rosea is often mistaken for a syphilitic roseola, and may precipitate both the patient and the physician into a trying dilemma. This skin affection should always be considered whenever a macular rash that may be syphilitic is seen. It generally begins as a mother patch which may or may not have been noticed by the patient. A search should be made for this patch, the most frequent location being somewhere in the region of the flank. If it is a superficial rash with cigarette paper wrinkling, the wrinkling seen best in an oblique light, it is easily distinguishable from a roseola in which the cigarette paper wrinkling is absent, and in which the redness is more deeply situated and of a more delicate rose tint. One should always look on the forehead, scalp, palms and soles, as well as in the commoner locations on the body for rose spots of syphilis, as the spots of pityriasis rosea will not be found in these locations.

A man of thirty-five while attending the Exposition, with his wife, developed a scaly patch on the prepuce. This was followed by a wide spread macular and patchy eruption of brownish red color and with cigarette paper wrinkling. His physician whom he first consulted, made a diagnosis of syphilis. Being assured in his own mind that he must have contracted the disease innocently, the man immediately informed his wife as to the physician's conclusion. She insisted upon his seeking further advice, but on being assured it was pityriasis rosea was inclined to think it was a trumped-up diagnosis to avoid a family row.

A roseola may escape a correct diagnosis because of an absence of a definite history. A middle-aged woman of excellent habits consulted her physician for a white spot on the right tonsil, which was treated. An ulcer appeared, became quite hard, and was accompanied by swollen nodules in the right side of the neck. It resisted local treatment and the tonsil was removed. Three months later a rash appeared, first on the flexor surfaces of the arms, then on the body in the flanks, and upon the legs, and when I saw her it was a typical roseola, which had been present about three weeks. Her blood serum gave a strongly positive Wassermann.

It seems that errors are more frequently made in the diagnosis of late cutaneous syphilis and late lesions of the mucous membranes than in early syphilis. There is often such a close resemblance to epithelioma that all aids possible have to be used to reach a conclusion. The same applies, although of less frequent occurrence, to tubercular ulcer, lupus vulgaris and lupus erythematosus, and also to the commoner skin diseases, psoriasis and the indolent seborrheids. The above mentioned diseases may in turn be easily mistaken for syphilis as may erythema multiforme, acne indurata, and some of the uncommon conditions, such as leprosy, mycosis fungoides, Bazin's disease, and almost all other granulomata. The list is by no means complete, but it includes the more frequent. It would seem that iodid eruptions are at present less frequent than formerly. This drug is not so commonly employed since the introduction of salvarsan.

I have the record of a case in which there was extensive destruction of all the soft tissues of a large part of the forehead, including the periosteum and outer plate of the frontal bone, which had started more than ten years before and had slowly but steadily progressed. There seemed no doubt clinically that it was an epithelioma, and many previous diagnoses of this had been made. As it occurred before the advent of the Wassermann reaction, and as it was inoperable if cancerous, mixed specific treatment was prescribed as a therapeutic test. Improvement was soon noticeable. Though it required many months, healing was eventually complete. The separation of a tremendous slough, including a piece of the outer plate of the frontal bone, in size, irregularly four by seven centimeters, was an interesting feature of the case.

At the present time many physicians are loth to make a therapeutic test when laboratory findings are negative. This should not be, as it is not at all unusual for long standing late lesions to clear up under antisyphilitic medication after all other proofs have failed in establishing a diagnosis. Yet one should not reach a conclusion too quickly from the effects of medication.

Recently a man with a large ragged ulcer about five centimeters in diameter, situated on the back of the neck, sought treatment. The lesion had been growing about three years. There was an objection to an operation, and as there was suffi-

cient indication in its appearance for antisyphilitic treatment, potassium iodid internally and mercurial ointment externally were prescribed. Under the medication the ulceration almost disappeared and improvement was marked. It then looked even more like an epithelioma than before. It was removed and microscopically shown to be epitheliomatous, without any evidence of luetic involvement as might have been surmised.

Late ulcerative syphilis about the mouth and nose is not uncommon, yet incorrect diagnoses are frequently made. In Demember of last year I saw an instance in that of a man thirty-two years old with an ulcer on the upper lip in the left side of the mustache, which began two months before. It was very deep with a necrotic center and rolled, uplifted, undermined edges. There were a large number of scars, the result of ulcerations that began below the vermilion border of the lip, a little to the left of the median line, and spread across to beyond the right corner of the mouth. There was immense scarring of the extensor surfaces of both forearms and of the legs. These scars were the result of ulcerations which began in 1905. Under neosalvarsan and grey oil injections, healing was rapid. This case was interesting because of the long continuance of the ulcerative process, of the varied diagnoses that had been made, and the like varied but ineffective lines of treatment that had been followed.

Another and even a more interesting instance of ulceration near the mouth was in that of a woman thirty years old who gave a history of first noticing what were supposed to be canker sores along the inner surface of the lower lip two years previously. Then followed a more prominent affection of the left corner of the mouth about one year later. This healed and the affection appeared at the right corner of the mouth about six months before she came in, involving both the skin and mucous membrane. It remained almost stationary for the whole time. There were present enlarged but freely movable lymph nodules both sublingual and right submaxillary. There was a small scar above and one below the right corner of the mouth. The patient had been almost constantly under the care of one or another physician, but apparently was never given antisyphilitic treatment. The Wassermann reaction was repeatedly negative and so was misleading.

The presence of scars as of ulcers healed, is a strong point in favor of syphilis, and of great assistance in the diagnosis of a doubtful lesion. There are other conditions about the face which in partial healing may leave scars, notably lupus erythematosus, and far more rarely in this country, lupus vulgaris. The scars resulting from healed gummatous ulcerations are more deeply pitted, as would be expected from the character of the lesion which, when absorbed, is usually absorbed rapidly, leaving a very definite loss of substance. This loss is only partially filled in by rapid forming scar tissue, hence the resultant depression. I have seen marked keloidal growths follow the healing of syphilis. They were from early ulcerations that through their secretions formed crusts, which covered a secondary staphylococcic infection. This secondary infection stimulated the production of exuberant granulation tissue, and this in turn necessitated that the epithelial covering should grow up over the granulations, thereby forming hypertrophic scars.

Herpes zoster often leaves deeply pitted scars on the face. These scars should not be puzzling even when some subsequent lesion appears, as their limitation to one side only and the clear ascertainable history of their production, prevents them from being mistaken for anything else.

The kidney shape of luetic ulcerations due to healing in one section while spreading in all others, is not as marked in gummatous lesions on the face or mucous membranes as elsewhere upon the body. A very common location of slowly spreading syphilitic infiltration is in the naso-facial fold extending into the nostril. It may progress for months with very little ulceration and be easily mistaken for epithelioma. A most deceptive manifestation of late syphilis not infrequently occurs upon the scalp as split pea-sized ulcerations in groups of few or many. They are the result of the breaking down of miliary gummata. It is here that the raw ham color is so definite that it should be a key to further inquiry.

Lupus erythematosus is frequently diagnosed as syphilis. It is a disease that may so closely resemble a serpiginous syphilide as to deceive anyone, especially when not present as the typical bat wing eruption of the nose and cheeks. It may have a deeply infiltrated edge that spreads from a portion that has healed, leaving a scar just as syphilis may, but without ulcerating, and the scarring is smoother and less depressed. Lupus erythematosus is almost always scaly or crusted and has horny comedo plugs distributed throughout the active portion, while the spreading syphilide when not ulcerated has a smooth surface almost velvety in character. I mention lupus erythematous as it is not uncommon, whereas lupus vulgaris is rare in California.

Seldom is syphilis mistaken for leprosy, but it is probably not too broad a statement to make that practically every instance of cutaneous leprosy seen in California has at some time during its course been thought to be syphilis. As the Wassermann test is frequently positive in leprosy, the affair becomes more complicated. Habitual testing of the sensations of touch, pain and temperature in doubtful serpiginous lesions may lead to an occasional surprise, for if the lesion be lepra and not syphilis, the anesthesia will be the deciding point in the diagnosis.

Throughout this discussion I have purposely placed but little stress upon history as a conclusive factor in the diagnosis of cutaneous syphilis. In a very large proportion of the instances we see in which errors have been made either by ourselves or others, the history has been misleading. Often there is an absence of a positive history when the condition is syphilis, but in other instances the patient will call attention to the fact when seeking advice, that he had had syphilis, whereas the lesion for which he seeks advice is non-syphilitic. It is safest to place only such re-

liance upon the history as is indicated by the case in hand.

Another especially important point to be considered in the avoidance of error is that before reaching a positive conclusion as to a lesion present on an exposed part of the skin, all other parts should be carefully inspected.

A widow, forty-one years of age, was sent in with an eruption on her left arm, which had been diagnosed as tuberculosis. The eruption consisted of dusky red blotches on the extensor surface of the left forearm, with a good deal of infiltration. It was noted in the record at the time that "the infiltration is deeply seated and may be partly due to having had a leech applied yesterday." It was also noted at the first visit that "lupus nodules can be seen with dioscopy." I never saw a better example of the apple jelly nodules seen through a glass slide pressed upon the lesion to remove the blood from the skin. The eruption was of fifteen years' duration. When it first appeared the patient was helping her husband in butchering, a trade exposed to tubercular infection. The diagnosis of lupus seemed a positive one and treatment was begun accordingly.

On a subsequent visit I learned there was a periostitis of the left tibia, a number of small ulcers and many scars of healed ulcers near the left knee that were without doubt specific. The first ulcers had appeared nineteen years before. On the first visit the patient was too timid to mention the leg condition, and I was so sure the lesions on the arm were tubercular I did not examine her more thoroughly. Under antisyphilitic treatment all the leg lesions healed and simultaneously those of the arm as well.

It is sometimes extremely difficult to differentiate between syphilitic and varicose ulcers of the leg, especially when the ulcers are out of their usual zones. The upper third below and about the knee seems to be reserved for syphilis, whereas the venous defects usually occur below this region. Tubercular ulcers of the leg are infrequent unless associated with other tubercular conditions. It may not be possible to conclude from the ulcer's character which it is, but in most instances a conclusion can be reached from the clinical appearance. Multiplicity speaks for syphilis as does the presence of scars. Punched-out crater-like ulcers, irregularly kidney shaped, are usually syphilitic, and there is lacking the veil-like film seen over the base of a varicose ulcer. This film, which is caused by streptococcic infection, is nearly always present in the latter, and the ulcers are usually surrounded by doughy oedema and brownish-red discoloration. Close inspection of the oedematous skin will reveal many superficial venules. Pain may be present in either, but it is more frequently severe in varicose ulcers. That all varicose ulcers have syphilis as an etiological factor, as is sometimes suggested, is incorrect.

I have under my care at the present time an elderly woman with multiple ulcers over the instep, and about the internal malleolus of the left foot, that were mistaken for varicose ulcers. There is an absence of specific history and of concomitant proofs of syphilis, yet the unusual and long-standing ulcerations are healing rapidly under antisyphilitic medication.

In dealing with doubtful lesions I have found it helpful to habitually consider certain points: A syphilitic lesion may remain for years and not ulcerate; never cauterize a sore on the penis until a positive diagnosis is possible; never make a snapshot diagnosis; carefully manipulate the lesion for the character of induration; examine the whole body; look for scars of former lesions; look upon the absence of history as of only secondary importance; consider a doubtful Wassermann negative unless further proof develops. If the clinical picture does not warrant it, never allow the patient to depend upon one positive Wassermann; with sufficient clinical evidence do not fail to prescribe specific treatment; a therapeutic test may clinch a diagnosis. And here it may be remarked that it is not necessary to administer salvarsan for this purpose; mercury and potassium iodide may prove even more in a few days than would an injection of salvarsan. Never tell a patient he has syphilis until you are sure of the correctness of your diagnosis.

I think it is sometimes forgotten that a patient once weighted with the thought that he has syphilis almost never again feels free. Such a diagnosis when once impressed upon him, even though it be strongly contradicted later, leaves him in constant fear. The demand made upon physicians for immediate opinions is so great that hurried conclusions are almost forced. It is wrong that more should be required of the physician than of an attorney in a difficult situation, unless time is urgent. He has the right to insist upon all the time necessary to thoroughly study his case, and he should assume this privilege. It is far better for him that he lose the case than that a hurried and in correct diagnosis be made.

Discussion.

Dr. D. W. Montgomery: The subject dealt with is of perennial interest—the differentiation of one disease from another or even from many others. The reverse of this, the consideration of the similarity of diseases, is hardly of less interest. Shortly ago I had a conversation with Dr. A. L. Fisher on this latter subject. Disease is the result of a conjunction of the human body and an irritating agent. Symptoms are the expression of the disturbed physiological processes. The variation in the symptoms is in a large measure due to the way the irritant acts on the body or on the particular part of the body selected by the irritant. The body and its physiology being practically the same in all races and in all climates, and the action on the tissues of one irritating agent being necessarily very similar to the action of any other irritating agent, the wonder is that the points of differentiation between the different diseases are so marked. But it has been only by the labor of a great number of very talented men that these differences between disease processes have been discovered and formulated.

The similarity between diseases must be greater between the individual maladies of certain groups, as, for instance, between those constituting the granulomata. Syphilis, however, in its course belongs to several groups successively. At first, as a chancre, it belongs to the group of the infectious ulcers. Then as the infective agent becomes dispersed throughout the body, and the extensive cutaneous eruptions appear, syphilis partakes of the characteristics of the exanthemata. Finally as the

disease slacks in intensity and becomes localized in this or that situation, it resembles the chronic granulomata.

Dr. Culver dwelt on the diagnosis between syphilitic roseola and pityriasis rosea, which is particularly important because this error may occur at a critical time in the course of syphilis, when the urgency for treatment is great and the danger of conveyance of infection, if untreated, is imminent.

The liability to err both negatively and positively is always present. The doctor, for instance, cites a case in which what was probably an intestinal intoxication gave rise to an eruption simulating either a pityriasis rosea or a syphilitic roseola and a positive Wassermann reaction of his blood serum.

We are apt to forget how recently the English-speaking medical world has been apprised of the existence of this disease, pityriasis rosea. Adamson recently in a few obituary remarks on the life of the late T. Colcott Fox, mentions that Gibert, the French dermatologist, was the first to describe this disease, and that in 1880 Duhring had described it in America. Four years afterward, in 1884, Fox wrote a short paper in the London Lancet on pityriasis maculata et circinata, which was the first account of the disease in England.

Dr. H. E. Alderson: This is a very interesting, important, and practical subject, introduced in an interesting way, and a subject which those of us interested in this question are always very glad to see brought up before a general medical meeting. If these matters were discussed more generally there would not be so many mistaken diagnoses.

It is not as difficult to make a mistake in the diagnosis of a late cutaneous syphilide as it is with an early syphilide, and yet we often see a diagnosis of epithelioma made in these cases and operation advised. During the past few years I have had a considerable number of such cases. Most of these patients were frightened at the prospect of an operation; went to several men in succession, all of whom made a diagnosis of epithelioma, and it turned out to be syphilis.

In making a diagnosis in early cases, I think a common mistake is in looking for the classical symptoms of Hunterian chancre. Many primary syphilitic lesions fail to show induration and some other classical features. We make it practically a matter of routine to use the dark field condenser in all cases, even though some of the sores may be clinically herpes or chancroid. A few days ago we had a beautiful specimen of serum, amounting to a practically pure emulsion of treponoma pallida, obtained from beneath the floor of what was clinically a small herpes on the corona. Often, however, it is difficult to make a satisfactory dark field examination from genital lesions the first time the patient comes in, for the reason that the average patient obtains calomel, black wash or some other mercurial and tries to get rid of his trouble himself, with the result that the surface is for the time being freed from spirochaetes. We make it a practice to have these patients wash the surface with some mild soap and a non-bactericidal solution, and apply normal salt solution compresses, cold or lukewarm. Then after a couple of days it is possible to get satisfactory specimens.

Cutaneous syphilis can assume the form of so many skin diseases that we get in the habit of regarding almost every atypical case with suspicion. I have frequently seen nodular ulcerating crustaceous syphilitic lesions around the mouth and nose strongly resembling carcinoma. Fairly often a patient will come in with grouped crusted lesions or pigmentation in the distribution in which we commonly see herpes zoster on the side of the thorax, and the resemblance to a healing zoster is very striking.

Dr. C. F. Welty: Syphilis of the ear, nose and throat is comparatively easy of diagnosis in all of its different stages by trained physicians, in that line of work.

I once saw a chancre of the ear and made the diagnosis easily.

Deafness, due to syphilis, is much more complicated but may be cleared up with almost positive certainty.

Nasal syphilis, we see in the form of gummata, granulomata and bone lesions, all easy of diagnosis. As a rule syphilis does not attack the cartilage, usually bone. Once I did a septum operation for gumma of the septum. When I found a straight bone, I knew I had made a mistake. However, the circumstances surrounding the case were such that they led me in an entirely different direction.

Throat, buccal cavity, tongue, tonsils, pharynx: chancre of the lips seen every short while; chancre of tongue occasionally seen. Mucous patch may be seen anywhere, more particularly just within the mouth and about where the mucous membrane of the buccal cavity comes in contact with the cutting surface of the teeth.

Deeper ulcerating surfaces seen more particularly involving tonsil and about the margin of the gums.

Gummata of the hard palate: Tertiary manifestations of syphilis, such as large amount of scar tissue with ulcerations intervening. In other instances where the tongue is deeply furrowed, it should make you very suspicious.

As I said before, all these conditions are more or less easy of diagnosis, and doubly so when you can confirm it by a shortened bone conduction, or a syphilitic lesion elsewhere.

In fact, I am so sure of myself on many occasions that I do not care for a Wassermann reaction; it is only done to satisfy the patient.

Syphilis of the larynx is to me more difficult of diagnosis, and in many instances will have to depend on the therapeutic test confirmed by Wassermann reactions.

In all chronic, laryngeal cases with an increase in the size of the true or false cord; a perichondritis or other enlargements or ulcerations, syphilis must always be thought of and differentiated from a simple inflammation produced by irritation, tuberculosis and carcinoma as well as rhino scleroma.

Dr. H. B. Graham: In the diagnosis of syphilis of the mucous membranes, we hear much about the ulcerated lesions, gummata, and the broken patches of the mucous membranes; little is ever said about certain other signs that we get in all kinds of syphilis, both congenital and acquired. In many syphilitics we find a general, diffuse, bluish swelling of the mucous membranes, which occurs in the nose, mouth and larynx. It is aggravated by tobacco, and is a sign that is easily seen and very easily referred to syphilis as soon as the diagnostician once gets the blue picture in his mind. In the clinic, we very seldom miss a definite positive Wassermann in these cases.

I have said at some other meetings here that the diagnosis of syphilis is possibly more easily made above the neck than in any other region of the body. If the physician will examine the 8th nerve, pay attention to the eye, and to the mucous membrane of the nose, mouth and larynx, he will get his diagnosis of syphilis quicker than anywhere else because there are always signs there that can be localized. But I want particularly to call attention to this blue, soggy swelling of the mucous membranes, particularly of the nose.

Dr. John C. Spencer: My colleague, Dr. Welty, having started the ball rolling in the way of honest confessions, I want to report something which occurred in my experience in the pre-Wassermann days.

A brawny young Scotchman came to me with

the firm conviction that he was the subject of a syphilitic infection. Clinically his evidence was so meager that I was misled. He was engaged to be married to a very estimable young woman, and upon my diagnosis depended his perfectly manly desire to terminate the engagement, or leave matters in statu quo. There was a very vague history of a small lesion on the penis which I did not see. When he came to me, all he showed were a few scaly papules in the eyebrows and scalp. I slipped up on the diagnosis. He was so thoroughly convinced of the correctness of his diagnosis that he discontinued his visits to me and passed to the hands of a colleague who put him on antisyphilitic treatment, and those lesions cleared up.

Another was that of a sturdy young nurse attached to one of the hospitals in the city, and temporarily detached to attend a patient under my care. She had a lesion of the tonsil which I failed to recognize as syphiltic. After leaving my case she went back to the hospital. The visiting laryngologist of the hospital (I do not remember his diagnosis) concluded that the tonsil should come out and attempted to remove it by morcellement, under local anesthesia, with the result that a great deal of blood was lost. The lesion returned promptly. She was subsequently placed upon antisyphilitic treatment and the condition cleared up.

Dr. Culver correctly stated that no lesion of the genital organs should be cauterized until the diagnosis is made. This I consider wise judgment. The inference from that statement would lead one to believe that there are lesions which should be cauterized. Cauterizing any lesion on the penis—whether luetic or chancroidal or not—is bad practice, because these conditions may be overcome by other methods and the patient is saved the possibility of a complicating bubo.

Captain H. J. Nichols: One condition has not been mentioned in which the patient has syphilis, and incidentally has an epithelioma or some non-syphilitic ulcer; the Wassermann is taken and found to be positive, but if a section is made the lesion is found to be a true epithelioma.

I remember an instance of an investigator in syphilitic lines, who had a canker sore of the mouth due to some digestive disturbance. He asked me to examine it with the dark field; of course I found nothing. At that time we did not take his Wassermann, but a year or two later his Wassermann was taken and it was found that he was infected, and the examination of the spinal fluid showed that he had been infected for some time. If we had made a Wassermann earlier we might have thought the non-specific ulcer was luetic.

I admire the doctor's attitude toward laboratory reports and diagnoses as compared with the clinical. I think the pendulum is swinging back where it belongs. Clinical medicine is a distinct art in itself and should not be allowed to become obsolete in favor of laboratory findings. The Wassermann reaction certainly is not specific in syphilis any more than the X-ray plate is specific for kidney stone; but it seems to me that people who ignore the value of laboratory aids are even worse off than those who place too much dependence upon them.

Dr. G. C. Macdonald: I have been disappointed in Wassermann reactions. In some cases I have watched cases systematically and treated them intermittently. In the case of a man with true Hunterian chancre, I stop treatment for three months, have a Wassermann examination made with negative results, although clinically the disease is present. I know of a case of a young man in the country now; he went through all the secondaries of syphilis and he has failed to show a positive Wassermann. There is no doubt that he has had syphilis. Although I am not one of those men who put laboratory findings on one side, I would not consider a laboratory finding final unless it coincided with the clinical manifestations.

I did not know that anyone ever cauterized chancres any more. Soft sores can be cured by saturated solution of argyrol. Of course in the case of sloughing phagedena extensive cauterization might become necessary.

Speaking of the skin lesions of syphilis, we know them to be polymorphous. One of my old teachers used to tell me that syphilitic rashes were like cuckoos; they have no nest of their own, but use everybody else's, hence they simulate every other kind of eruption. Syphilitic rashes never itch and have as a rule the typical raw ham appearance.

Speaking of the obscure cases where there has been no primary sore observed, we should remember that probably every fourth gonorrhea is an urethral chancre, and soft sores very often but conceal a true Hunterian chancre which manifests itself by the "soft sore" becoming a hard one on or after the 21st day from infection, the patient having the double event.

Dr. A. S. Keenan: We have heard from the ear specialist, the throat specialist and the G. U. specialist; it may not be amiss to have a word from the general practitioner, because we see cases of syphilis and, judging from the open confessions made here to-night, we make almost as many mistakes. One point that has helped me in diagnosing chronic syphilitic lesions, is that the blood pressure is 10, 15, or 20 points higher in a syphilitic case. While this may not be a very important matter, when you are weighing the pros and cons of a case it helps you a good deal.

We frequently have to fall back upon the therapeutic test in deciding doubtful questions, and it comes to this: if the lesion can resist the point of salivation it is not syphilis, and if it disappears it is syphilis. We often have to give mercury and iodide to clear up those doubtful cases.

Another point that gives the general practitioner a good deal of trouble is the ethical side of the question. It is difficult sometimes to know what to tell a man when you believe, but are not sure, that he has syphilis. I remember a glass blower who came to me with a chancre of the mouth, and he wanted to return and take up his work. That was a few years ago, when each of three men blew twenty minutes on the tube. I told him that he must quit and he said he would not. Finally I told him that if he did not quit I would lay the matter before the Board of Health, and that frightened him, and he promised not to return to work.

I had another one of those doubtful cases, which gave me considerable worry. Recently I confined a woman at the hospital, and it was the custom at that time to have a Wassermann of all the placentas. In this case the Wassermann was positive, and besides there was a history two years previously, of a miscarriage. I told the woman to have her husband come in to see me. He came to my office that evening. He was a big stevedore, and wanted to know what I wanted with him. In as gentle a manner as possible, I told him how the blood examination made on the afterbirth had pointed to syphilis, and that he must have the disease. He became very indignant, stormed up and down the office, threatened to "knock my block off" and made an awful fuss, because I had dared to charge that he had any disease or that his wife had any disease. He had never been ill in his life, and to exemplify his good health, he thumped his chest. I backed water a little, and explained that the Wassermann test of the blood might in some cases be wrong. This retraction only made matters worse. A good workman, he said, knew when his work was right or wrong, and I must be a poor doctor to make such a charge without any evidence. He threatened to sue me and the hospital for making false

charges. The next evening he came to the office, but in a different frame of mind. He was full of apologies and with tears in his eyes, confessed that twenty years before he had had syphilis.

In cases like this, when you are yourself doubtful about the character of the disease, it is a serious matter to charge a person with syphilis, and it is, on the other hand, poor medical treatment to let the case pass without the proper advice. It is in such cases a difficult matter to know what to do, to do right.

Dr. G. D. Culver, closing discussion: The paper did what I wanted it to do—it brought out discussion, and I have enjoyed it and profited by it.

Dr. Welty said that he had not had much trouble in diagnosing early lesions of syphilis, such as mucous patches. It is true that they are not so puzzling. Most of the errors I called attention to were with chancre of the mucous membranes and other ulcerated lesions.

Dr. Graham spoke of the ease of diagnosis of lesions above the neck. I do not agree with him. I have seen sarcoma in the roof of the mouth and syphilis in the roof of the mouth, and the picture—as nearly as I could judge—was exactly the same. I think we are inclined to look upon syphilis as fairly easy to diagnose. It is not. We all make mistakes and we are going to continue to make them. I brought up the subject with the idea of calling attention to a few points that should make us a bit more careful. I do not think we should be misled by any laboratory report, whether positive or negative. You may have to deal with a lesion that is not syphilis, yet get a positive Wassermann, and we must consider that there may have been syphilis before, and the positive Wasserman may be the only indication present.

Dr. Spencer called attention to the fact that it might be inferred that I thought cauterization was a good thing. I do not remember ever having cauterized a chancre. We find that the lesions, no matter what they are, react to other treatment better.

I think chancroids must go to the G. U. men; they are very scarce in my work.

The question of considering any lesion which yields to treatment as syphilis, may get one into trouble. There is a skin condition which resembles syphilis and which yields to the iodides, notably sporotrichosis. We also know that blastomycosis, which may easily be mistaken for syphilis, will improve under the iodides. Not many years ago I saw a case of mycosis fungoides which I was determined was syphilis. Every test was negative, treatment was negative; after following the case for a number of months I came to the conclusion it was mycosis fungoides, and it proved to be that disease.

It is so easy to err in the diagnosis of syphilis, so difficult not to do so, that any discussion such as we have had should be of marked benefit.

THE LATE CORRECTION OF MAL-UNITED FRACTURES OF THE EXTREMITIES.*

By P. S. CAMPICHE, M. D., San Francisco.

The treatment of fractures has received so much attention in the last few years, and the progress made in this branch of surgery has been so great, that it seems as though a bad result should now be a thing of the past; and yet, for reasons to be stated below, it appears that mal-union still occurs in a large number of cases. It goes without saying that the best anatomical and functional result should always be our aim, but this ideal is not attained at all times and the fact remains that even nowadays the primary treatment of many fractures often results in disaster.

The causes for the failures are many; some cases are difficult to diagnose, others present extraordinary obstacles to treatment even in the hands of the best surgeons, while tardy consolidation and anomolies in callus-formation, such as exuberant callus near an articulation or a deficient callus, at times determine an unfavorable result. But in most cases the harm is due to the fact that the fracture has to be treated by a man who does not have adequate facilities for the work, although the doctor is not always the one to blame for embarking in such a risky enterprise; we all know how difficult it is to persuade patients in outlying districts to leave their homes and go to the city for treatment.

To the doctor who admits that he is not properly equipped, the patients, even well-to-do persons who do not need to consider the expense, will answer that they will be satisfied with any kind of a result provided they do not have to leave their homes; this sounds very nice, but the same people who exert such pressure on their physicians and influence them to assume the responsibility for treatment of the case are the first to criticize him mercilessly and even to threaten to sue for damages in the event of a faulty union, and are without any regard for the man who has done his level best under adverse circumstances to please and to help them.

Let us follow the course of a typical case of this kind. By this time six or eight weeks have elapsed since the accident and the failure becomes every day more apparent to the doctor and also to the patient. This is the very time when prompt decision and energetic action are in place to prevent the patient from regarding the result as final and to persuade him that an important correction is still possible and necessary; but, curiously enough, a period of discouragement and inertia sets in during which both the surgeon and the patient seem loath to undertake anything definite, and nothing is done for a long time. To point out that there is still much room for progress in this direction and to call the attention of the medical profession to the great loss of time and working capacity entailed by such a course is the object of this paper.

In cases of this kind that have come to me for final correction I have often noted that four, six, eight, and even ten months have been permitted to elapse after the original injury before a surgical procedure would be proposed and accepted; during all this time the patient remained disabled and in a crippled condition. Many of them were unable to walk, and one, a young lady with a fracture near the elbow, was for months unable to dress alone; this patient had a supra condylar fracture of the humerus combined with posterior displacement of the inferior fragment in such a way that flexion was impossible. This was allowed to continue for four months before she came for an osteotomy of the humerus.

Again, a boy with a simple malleolar fracture was kept in a cast without any attention being

* Read before the Forty-sixth Annual Meeting of the Medical Society of the State of California, Coronado.

paid to the equinus position of the foot; for nearly five months he was left to hop around with a bad ankylosis before he was sent for surgical treatment. It was impossible to break the ankylosis even under an anaesthetic, and a resection of the tibio-tarsal joint was necessary in order to restore sufficient motion. In another case a young man was left in a cast with his foot in a marked equinus position and nothing was done until it was finally realized seven months after the accident that he would never walk with that stiff joint.

A man with a fracture of the femur that had healed with great shortening, and also with the left elbow ankylosed in full extension, waited nearly four months before he came for an osteotomy of the femur and an arthroplasty of the elbow. Another man with a false joint, pseudoarthrosis, of the femur, came to me for a bonegraft operation as late as ten months after the accident. These are only a few that I have actually witnessed, but I have heard of many similar occurrences and in some of them the length of time so wasted has been incredibly long.

It is clear that such great delay in resorting to rational surgical treatment results in a prolonged and unnecessary period of total disability as it could nearly always be either avoided or much shortened.

The attitude of insurance companies toward such delays is surprising; the same insurance companies that are very strict with independent surgeons raise no objection when their own men for a relatively simple fracture keep the patient in hospital six, eight, or ten months, or more.

At all events, whatever may be the cause for such great delay in resorting to surgical treatment in this class of cases, whether discouragement, pessimism, or mental inertia, the attitude of the medical profession in relation to further and more active treatment does not seem justified, and is to be deplored. Sad as it is to experience a check in the primary treatment of a fracture, we should never forget that the resources of surgery are great and that the results of secondary orthopedic operations for mal-united fractures especially are very gratifying.

Of course it is always better, if possible, to prevent faulty union; but granting that a bad result could not be avoided and perhaps becomes firmly established, the situation is very much like that of a ship in danger of sinking through some mistake or misfortune due to its officers; even in this extremity it is the duty of the captain, not to remain idle, but to handle his vessel in such a manner as to save as much as possible from the wreck. The surgery of mal-united fractures is also salvage surgery, but it is well worth trying to do. For here also, when everything seems lost and all hope has been abandoned, a well planned orthopedic intervention and judicious after-treatment will often save a surprising amount of function for the patient, and this should be welcome news to a man already in fear that he will remain a cripple.

Another reason why the medical profession should avoid delay and should avail itself promptly of the help of surgery in mal-united fractures arises from the frequent threats of malpractice suits which seem to have become daily occurrences. If the physician after treating a fracture six weeks or two months finds the result unsatisfactory, then temporizes and hesitates several more weeks or months, the patient will gain the impression that the treatment is ended, and realizing eventually that the bad result is a consequence of the treatment, the next thing that will come into his mind will be a suit for damages.

If, on the contrary, the physician himself on recognizing after a few weeks that the result is not good, would declare without any hesitation to the patient that the union is not what it should be, that this occasionally happens in the treatment of fractures, and that the necessary correction can be assured only by an operation, the patient would realize that the treatment was not concluded, that there had been only a delay, and that what must next take place was merely a continuation of the cure. This would immediately shut the door to any intention to start a malpractice suit, for it would be clear that no one could be held responsible for a treatment which had not yet been completed.

Therefore if these cases are recognized early, handled with decision, and submitted promptly to operative intervention, much would be gained for the reputation and peace of mind of the physician attending, as well as for the welfare of the patient. In this field we have at our command many procedures and interventions which can only be mentioned briefly here, such as removal of interposed muscles and fascias, freeing of compressed nerves, osteotomies, bonegraft operations, occasional wiring, and resection or arthroplasty; some one or other of these methods may often sufficiently improve conditions to give the patient a useful limb.

CONCLUSIONS.

1. From circumstances independent of the will of the surgeon, many fractures conscientiously treated by the ordinary methods result in malunion and in impaired function, making necessary some surgical intervention.

2. Owing to undue pessimism and discouragement of both the patient and his attending physician, the time elapsing between the accident and the decision to submit to final operative correction is much too great and often as a rule keeps the patient several months unnecessarily in a condition of total disability.

3. This pessimism is wholly unjustified as the secondary correction of mal-united fractures is yielding very good results and should be resorted to as promptly as possible.

4. If, in cases with a bad result, instead of a long interruption in treatment the necessary correction were immediately recommended at an early date the patient would believe this to be a mere continuance of the cure, and this itself would go a long way to check any idea of starting malpractice proceedings.

PROHIBITION AND THE RETURNED SOLDIER; A WORD OF CAUTION.

Ernest H. Scammell, F. C. I. S., secretary of the Military Hospitals Commission of Canada, recently visited the New York State Department of Health and brought a number of direct and important suggestions which are discussed in the July number of Health News. Inasmuch as we wish to avoid the mistakes of the other warring nations, our readers will be interested in the following excerpt:

"'The problem of the returned soldier,' says Mr. Scammell, 'has been cut in half where prohibition has prevailed.'

"Mr. Scammell points to the general popular desire to 'fill up' the returned soldier. He has done his bit, the theory is, and treating is in order. With a full realization of the seriousness of the problem, even Quebec, which is not one of the dry provinces of Canada, closes its bars at nine o'clock and all day Sunday as a war measure, and prohibits treating altogether. British Columbia is at present the only Canadian province where it is legal to treat the returned soldier.

"So serious was the problem of inebriates among returned soldiers in the earlier years of the war, that the Military Hospitals Commission contemplated starting an inebriates' home. But prohibition and the consequent removal of the trouble made further talk of it unnecessary. In Ontario, indeed, the jail population became so greatly reduced, as a direct result of prohibition, that it was possible for the authorities to take over one reformatory for a convalescent hospital."

Book Reviews

Asthma, presenting an exposition of the non-passive expiration theory. By Orville Harry Brown. 36 engravings. St. Louis. Mosby Co. 1917.

Brown looks upon asthmatic dyspnoea as a mechanical interference with the bronchial blood and lymph circulation due to heightened intra-alveolar tension, this in turn being due to non-passive expiration. Inflammatory processes in the bronchi are usually responsible for most of the swelling found in asthma. Careful observation on 50 cases studied by Brown apparently confirm his theory. Admitting its correctness unfortunately brings us but little nearer our goal, i. e., the relief of our patients. The problems that remain are well stated. The literature has been carefully gone over and the absence of any recent review on this subject gives Brown's work an added value. We would especially urge its perusal by those specialists who still look upon asthma as a disease to be cured by nasal surgery or injections of "soups" made from cosmopolitan bugs.

R. B.

The Surgical Clinics of Chicago, Volume I Number III (June 1917). Octavo of 231 pages, 70 illustrations. Philadelphia and London. W. B. Saunders Company. 1917. Published Bi-monthly. Price per year: Paper $10.00, Cloth $14.00.

Contents.

Pulsion diverticulum of esophagus. Removal Murphy button from stomach 2½ years after gastro-enterostomy. Hernia of diaphragm. Carcinoma of jejunum. Vaginal hysterectomy for carcinoma of cervix uteri. Internal hydrocephalus. Pyloric obstruction following sulphuric acid poisoning. Thrombo-angitis obliterans. Varicocele. Obstinate sciatica. Gunshot wound of skull. Calcaneo-cavus. Local anesthesia for hemorrhoidectomy. Reconstruction of hepatic duct. Pancreatic abscess. Resection stomach for carcimona. Operative and radiotherapeutic treatment of uterine myomas. Perineorrhaphy. Therapeutic abortion and sterilization. Salpingitis. V-shaped hysterectomy for dysmenorrhea and leukorrhea. Treatment of burns with special reference to prevention of deformities. Mediatrinal tumor. Hallux vagus. Regional surgery.

The Medical Clinics of North America. Volume I, Number 1 (The Johns Hopkins Hospital Number, July, 1917). Octavo of 193 pages, 14 illustrations. Philadelphia and London: W. B. Saunders Company, 1917. Published bi-monthly. Price per year: Paper, $10.00; cloth, $14.00.

Contents—Hodgkin's disease with extensive skin eruption. Postural albuminuria. Diabetes with disturbances of external secretion of pancreas in syphilitis. Meningitis of unknown etiology. Atrial fibrillation muscular tissue. Progressive muscular atrophy. Essential hypertension. Dietetic treatment diabetes. Acromegaly. Combined scleroderma, Raynaud's disease and chronic arthritis. Hypertension. Dermoid cyst of mediastinum. Milroy's disease. Gastroptosis. Visceroptosis and chronic appendicitis. Medical after-care of surgical patients after abdominal operations.

Eye, Ear, Nose and Throat. Edited by Wood, Andrews and Shambaugh. Volume III of Practical medicine series for 1917. Chicago: Yearbook Publishers, 1917. Price $1.50.

Contents—Examination of eye. Hygiene of eye. Refraction. Diseases of eyelids, conjunctiva, lachryman apparatus, cornea and sclera, uveal tract. Crystalline lens. Retina and optic nerve. Ocular muscles. Toxic ambylopia. Glaucoma. Eyeball and orbit. General diseases and ocular symptoms. Injuries. Military surgery of eye. Ocular therapeutics. New instruments. Comparative ophthalmology. Middle ear. Internal ear. Septum and sinuses. Mouth. Tongue. Pharynx. Adenoids and tonsils. Endoscopy of bronchi and esophagus. Bronchi and trachea. Larynx.

Experimental Pharmacology. By Dennis E. Jackson. St. Louis. Mosby Co. 1917.

It is only the exceptional man who can give out again what he has learned—who can remember all the details that bothered him when he was a student. Dr. Jackson has produced a book so richly illustrated and so full of detail that it must always be an ideal one for students, and for instructors taking charge of laboratory courses in pharmacology. One has only to turn over the pages of this book to see how rapidly pharmacology is taking its place amongst the exact sciences.

The only criticism that we would make, and we believe it is a serious one, is that in drawing the many excellent illustrations the artist seems to have forgotten entirely that there are such things as anti-vivisectionists. There are a large number of drawings of dogs which do not show the method of anesthesia. Others do not show clearly that they are dissections, and all could easily be used by the antis with telling effect. To be sure, the anti-vivisectionists would think nothing of redrawing the illustrations with an ether mask erased, but it is flying in the face of Providence to give them twenty or thirty figures that do not need retouching. Besides, these plates show experiments not for original research but for class instruction. According to the antis these are useless and doubly objectionable. This book may undo much of the work done by those who are trying to protect medical research. Everyone who reports the results of animal experiments must keep constantly in mind the possibility that his paper will be read not only by those who accept as a matter of course that anesthesia was used, but by others who will gladly misconstrue his words, and use them to damn all research workers.

W. C. A.

Correspondence

Automobile Coupons.

To the Editor: It has come to our notice that a number of physicians have not signed the automobile coupons carried in the Journal, for fear the office will be over-crowded with zealous automobile salesmen. In order to overcome this and get the greatest amount of good for the Society, we beg to advise you that we will give the name of a prospective customer to but one agency. By this means it is possible to assist us in securing some very profitable advertisements for the Journal at a minimum amount of inconvenience to yourself.

If you have not signed one of these coupons, please do so at once.

Cordially yours,
R. E. BERING,
THOS. E. SHUMATE.

Medical Military Matters in California.

To the Editor:

The situation in California is progressing in regard to its response to the call for medical officers in the army. Up to the first of September 533 surgeons, or 9.4% of the medical population of the State, had been recommended for appointment in the Medical Officers' Reserve Corps. According to the calculation, however, California's quota for the 20,000 medical officers needed would be 800, so that it still has 260 odd men to supply. These must come from those who are less than 55 years old, have no imperative obligation (such as the charge of an isolated community or necessary work in hospital or medical school or in sanitation), who are able to arrange for the care of their dependents or who have an income apart from their professional income, which will support their dependents.

That these should be gotten by a selective draft inside of the medical profession has been urged and agitated by New York and North Carolina especially, the former State having worked out a very elaborate plan by which, inside the profession, this draft could be conducted, and the interests, first of the country, secondly of the community, and thirdly of the family and individual, could be considered with the least wastage of men and of effort. Inasmuch, however, as the voluntary enrollment and acceptance of commissions was going on satisfactorily to the Surgeon-General, so that he had already commissioned enough men to care for an army of a million and enough more recommended for commissions to care for 700,000 more (these numbers may not be strictly accurate at the date of publication), he objected to anything like a selective draft of medical officers.

In each state, in each county, then, it will be necessary for the men who are still needed to be selected personally, and this, which is the suggestion finally made by the Southern Medical Association, of which Dr. Joseph C. Bloodgood of Baltimore is chairman of the Committee on Medical Preparedness, is the plan which had been already adopted in this state, and towards which the California State Committee of National Defense (Medical Section) has been working.

The subject which has been of such great interest in the last few days, particularly since the Selective Service law put the selective draft into operation, viz: the exemption of medical students, hospital interns, and young medical men from the action of the law, has finally been settled by the President by the issuance of supplemental regulations governing the execution of the Selective Service law. (Editor,—See Department of Military News.) It is very satisfactory that a way so definite can be found out of the dilemma in which those who drafted the law found themselves, for they acknowledged from the very beginning the necessity of exempting from service in the ranks the medical man, who represents the highest development at the greatest cost through the longest time of a professional individual, also the partially educated physician in his student days, as the alternative would be an obvious extravagance of a specialized individual. But they did not dare put into the law any clause exempting any one class, lest they should open a way for other clauses exempting other classes which did not have any equal claim to exemption.

Very truly,
(Signed) HARRY M. SHERMAN, M. D.
Sept. 13, 1917. San Francisco.

State Society

IMPORTANT NOTICE—INDEMNITY DEFENSE FUND.

Notes are now becoming due.

Do not let your membership lapse.

Each member will be informed ten days in advance of the due date of his note.

Medical Defense Rules, Section 3: "Dues must be paid to the Secretary of the County Medical Society to which each member belongs prior to the end of February of each year. Any member whose dues are not paid prior to March 1st and whose name is not reported as having paid his dues by the Secretary of his County Medical Society is dropped from the list of members in good standing as of January 1st of such year, and such member is deprived of Medical Defense afforded by the State Society for the period from January 1st of such year to the date when his assessment is received by the State Society. Members whose assessments are not received on or before February 15th of each year will be notified by letter from the Secretary of the State Society of such fact."

PUBLICATION COMMITTEE MEETING.

5 P. M., September 4, 1917.

Present—Drs. Ewer, Hyman and Reed.

The following matters were discussed and constructive plans outlined for advancing them:

1. Development of the news features of the Journal.
2. Preparation of speciál investigation of certain advertising doctors, newspaper medical advertisements, and medical commercialism.
3. Special publicity and support for the State Board of Medical Examiners.
4. Introduction of joke column in advertising pages.
5. Continuation of department of pharmacy and chemistry on a basis of supplying practical technical matter from the pharmaceutical field for the practicing doctor.

Suggestions for Readers of Papers.

The Committee on Scientific Work of the State Medical Society, is planning for the meeting of April, 1918, at Del Monte, and some papers are now in the course of preparation. For the benefit of those who are contemplating reading papers, the following suggestions are offered in the belief that by observing the same there will be more time provided for the discussions, and the program will work more smoothly. The writer is indebted to Dr. Harry M. Sherman, past president of the society for this idea.

Remember that one page of double-spaced typewritten copy contains about three hundred words. To be heard and understood by all, a speed of

not more than one hundred and fifty words per minute is the most satisfactory. A ten minute paper then would contain about fifteen hundred words. To save time one should avoid reading long historical prefaces, and references to published papers, unless absolutely necessary to introduce the subject. Lengthy papers had better be condensed for reading and later published in full.

It is desirable to make every endeavor to limit the length of the papers because the program is usually filled weeks before the meeting and excellent papers which are received too late must be crowded out. The Society has grown so large that it has been necessary to divide it into sections. Even with this arrangement it has been found that the meeting hours at our disposal have not been sufficient to accommodate all of the good papers offered the committee. The members desiring to read papers therefore are advised to write to the committee as early as possible, and to condense their articles. The Committee on Scientific Work consists of Harry E. Alderson, chairman; R. A. Peers, secretary; Fitch Mattison and Walter Brem.

(Signed) H. E. ALDERSON.

A great number of physicians, who have enlisted for service during the present war, are embarrassed by unexpired leases, corporations from whom they rent having refused to cancel leases. When physicians are so much needed in the United States Army, every effort should be made to relieve them of contracts rightfully binding in times of peace, but which might better be waived in times of national peril. It is requested that all such cases be reported to Physicians' Lease Committee of the Chicago Rotary Club, which desires to create a strong public opinion favoring the canceling of leases in such cases. If advisable, the matter can be carried for consideration to Congress.

Preparation for an intensive campaign to prevent the spread of tuberculosis in the American Army and among those rejected by the draft will be the theme of the Southwestern Sectional Conference of the National Association for the Study and Prevention of Tuberculosis, to be held at the Grand Canyon of Arizona, on October 22nd and 23rd. Final details will also be discussed for carrying on the Red Cross Christmas Seal campaign, from which it is hoped to raise the $3,000,000 necessary for this war work.

The topics considered during the two days' sessions will constitute throughout a unified war program. How to provide adequate care for the thousands of men who will be rejected for the army because of tuberculosis or suspected tuberculosis, or who will be discharged because of this disease before the new army is sent overseas or after it is in France, will form the burden of the conference. Prominent authorities on tuberculosis from this section of the country will be among the speakers.

The first meeting will be a general medical session devoted to the method of discovering tuberculosis in war times, including a discussion of just what constitutes a diagnosis of tuberculosis sufficient for rejection from the army. At the general meeting following this session, the facts and figures in reference to tuberculosis as a war problem will be brought out, together with the machinery available and needed to meet it. This will be followed by round table discussion by nurses, health officers and state and local secretaries.

The Southwestern District includes the states of California, Arizona, New Mexico, Texas, Colorado, Oklahoma and Nevada. The officers of the conference are: President, Dr. W. Jarvis Barlow, Los Angeles, Cal.; vice-presidents, Dr. John W. Flinn, Prescott, Ariz.; Dr. E. S. Bullock, Silver City, N. M.; Dr. Robert A. Peers, Colfax, Cal.; Dr. Theodore Y. Hull, San Antonio, Tex.; Dr. G. W. Holden, Denver, Colo.; Mr. E. K. Gaylord, Oklahoma City, Okla.; Hon. A. E. Cheney, Reno, Nev.; secretary, John Tombs, Albuquerque, N. M.

Plans have been completed by the American Red Cross and The National Association for the Study and Prevention of Tuberculosis for the opening of the 1917 Red Cross Christmas Seal Sale about November 20, continuing up to January 1. The campaign will seek to raise at least $3,000,000 for the anti-tuberculosis movement in the United States, or more than double the returns in any previous year. The war has made it imperative that every possible facility for the care of consumptives be enlarged. Attention is called to the fact that the examination of 10,000,000 men subject to the draft, besides thousands of others who are enlisting voluntarily, has already and will continue to disclose thousands of new cases of tuberculosis, which have hitherto been unsuspected.

The money raised from the sale of Red Cross Seals will be distributed throughout the United States and most of it will remain in the communities where the Seals are sold. In every state, however, it is planned to establish a special war fund, to provide immediate facilities for discharged recruits and soldiers.

County Society News

FRESNO COUNTY.

Dr. Harold P. Hare, son of Dr. G. A. Hare, 815 McKinley avenue, and a medical graduate of the University of California, has received a commission as lieutenant in the naval reserve, and is ordered to Mare Island.

Dr. Hare is widely known in Fresno. For the past few months he has been associated with his father, and prior to that served as interne in the University of California hospital.

Dr. Kenneth Staniford has been commissioned lieutenant in the army medical corps and is ordered to the training camp at American Lake, Washington. Warren Paul Staniford, brother of Dr. Staniford, has received his commission as second lieutenant, and will also be stationed at American Lake.

RIVERSIDE COUNTY.

Drs. Bon. O. Adams, Arthur L. Brown and W. D. Rolph, Riverside physicians, have received their commissions in the sanitary corps, U. S. army, and are here under indefinite leave awaiting call to service. Dr. Adams has been appointed captain and Drs. Brown and Rolph are commissioned lieutenants.

Dr. Adams has served three years in the national guard, state of Colorado. His work will consist of medical duties and problems of camp sanitation for the greater portion of a regiment. He will have charge of some ten sanitary units. Lieutenants Brown and Rolph will each be in charge of a sanitary unit and will have 32 men and women nurses and orderlies under their jurisdiction.

SAN FRANCISCO COUNTY.

Proceedings of County Medical Society.

During the month of August, 1917, the following meetings were held:

Tuesday, August 7th, Section on Medicine.

1. Demonstration of a case of Perthes' disease.—G. S. Wrinkle.
2. Rectal hemorrhage.—A. J. Zobel.
3. The syndrome of mild reverse peristalsis.—W. C. Alvarez.

Tuesday, August 14th, St. Francis Hospital Clinical Evening.

1. Orthopedic problems; demonstrations.—C. C. Crane.
2. Cholesterin content of the blood in the diagnosis of gallstones.—M. V. Kramolin.
3. Syphilis of the stomach.—M. P. Burnham.

Tuesday, August 21st, Section on Surgery.

1. The prevention and treatment of localized muscular contractures.—A. Gottlieb.
2. Traumatic luxation of the sacro-iliac symphysis without fracture of the pelvis.—J. A. Simpson.
3. Management of the surgical risk in urologic surgery.—Frank Hinman.

Tuesday, August 28th, Section on Eye, Ear, Nose and Throat.

1. Demonstration of Cases.
   (a) Radical operation for improvement of hearing in a perfectly dry ear.—Cullen F. Welty.
   (b) Bilateral congenital buphthalmos.—Roderic O'Connor.
2. Review of glaucoma.——Edward F. Glaser
3. The medical treatment of non-inflammatory glaucoma and when to operate.—Hans Barkan.
4. Corneoscleral trephining in non-inflammatory glaucoma.—Kaspar Pischel.
5. The surgical treatment of glaucoma.—William Ford Blake.

Shortly after the declaration of war a number of enthusiastic members of the Masonic fraternity conceived the idea of entering the service of the United States Army in some branch of the service where they could all be together. It was found that this opportunity was available only by entering the ambulance service through the American Red Cross, and steps were taken along that line, the Corps to consist of five doctors and one hundred and nineteen men. Dr. R. Cadwallader of San Francisco was given a captain's commission and placed in charge of the company when it left the city for active training, preliminary to being sent to the front in France. The Masonic ambulance corps reached the mobilization camp at American Lake, Wash., on August 4th. The other doctors that accompanied the corps as first lieutenants are Dr. S. R. Berry, Dr. E. L. Doane of Oakland and Dr. R. A. Babcock of Willits. This is the first complete company leaving San Francisco, and also is the first enlistment of a unit where the members were almost all sworn into the service before its officers were chosen. The work of enlistment and equipment was done by the Masonic Club at the Palace Hotel.

SANTA BARBARA.

Dr. Phillip S. Chancellor of this city is to be chief of the medical service in a 1000-bed hospital to be erected in Mobilization Camp Kearney at Linda Vista. Dr. Chancellor was to report September 1st. His position carries the rank of major and the appointment cancels a call to service as medical director of a 500-bed base hospital which is being organized in San Francisco. Dr. Chancellor accepted the call to the San Francisco hospital some time ago and with it he would have received the rank of senior captain.

Military News

Exemption of Medical Students and Interns.

Interns and students who shall not have been called by a local board may enlist in the Medical Enlisted Reserve Corps, such enlistment entitling them to discharge from draft if thereafter called.

An application for enlistment under this paragraph must be forwarded to the Surgeon-General with the affidavit of the applicant, supported by the certificates of his school authorities, showing his present status as intern or student, and particularly how long he has been an intern in the one case, or the year of the medical course that he is pursuing in the other.

An intern who has served one year or more as such will not be enlisted in the Medical Enlisted Reserve Corps under this regulation.

An intern who is enlisted in the Medical Enlisted Reserve Corps hereunder will be called into active service under his enlistment, if his services are needed, at the end of one year of internship. Applications for commission in the Medical Reserve Corps, from interns who at the expiration of one year's internship are called for duty as members of the Medical Enlisted Reserve Corps, or from interns whose year of internship is about to expire, will receive proper consideration.

A medical student (undergraduate) who is enlisted in the Medical Enlisted Reserve Corps hereunder will be called into active service under his enlistment, if his services are needed, on failing to pass from one class to another, or on failing to graduate.

Interns and students who shall have been called for service by a local board under the selective draft law, may be discharged from the draft, on condition that they shall enlist in the Medical Enlisted Reserve Corps.

It will be the policy of the Surgeon-General as a rule to recommend discharge from the draft on the condition indicated, the discharge to be followed by a call to active duty under the enlistment in the Medical Enlisted Reserve Corps at the expiration of a complete year of internship or on the failure of the student (undergraduate) to pass to the next higher class or to graduate.

Interns and students who are enlisted in the Medical Enlisted Reserve Corps by virtue of these regulations, and are not called into active service under such enlistments, are required to report their status to the Surgeon-General as follows:

Interns, at the end of each three months' period, such report to show the total amount of internship since graduation, and to be countersigned and attested by the medical superintendent of the hospital.

Students, at the end of each semester, such reports to show whether the students qualified for advancement, and to be countersigned by the deans of their respective schools or by subordinate officers representing the deans.

In the execution of these regulations the department will not recognize internships in hospitals, sanatoriums or other institutions conducted for profit, or in small private hospitals (fifty beds or less), or new internships established or added since May 18, 1917, to those previously existing, at any hospital, excepting such as may have been newly established and added by reason of a proportional increase in the bed capacity of such hospital; nor will it recognize internships in the case of any graduate appointed thereto later than August 1 following his graduation.

Medical Reserve Corps of the Army.

The subcommittee on ophthalmology and otolaryngology refers to the following:

1. Officers of the Medical Reserve Corps who have specialized in medicine or surgery will be given an opportunity to perform the duties of their specialty when feasible, men of larger experience naturally being given preference.

2. In the Medical Reserve Corps there are three grades, viz, lieutenant, captain, and major. It is the policy of the Surgeon General's Office to recommend the great majority of applicants for commission in the grade of first lieutenant, with the expectation of making numerous promotions when the officers concerned have had an opportunity to demonstrate their professional qualifications and their adaptability to the military service after a reasonable period of active duty. Applications for increased grade are not favorably considered unless they come through military channels, in order that the Surgeon General may have the benefit of the recommendations made by the applicant's superior officers. Political influence is unnecessary.

In making recommendations for original commission age, professional attainments, and previous military experience are the chief considerations in determining the grade in which the applicant should be commissioned.

3. The pay of the different grades is: First lieutenant, $2,000; captain, $2,400; major, $3,000.

When assigned to duty in a city (not in camp, thus not serving with troops) the assignment carries with it commutation of quarters: First lieutenant, three rooms; captain, four rooms; major, five rooms; at $12 per room, heat and light additional.

4. Acceptance of a commission in the Medical Reserve Corps automatically places your services at the disposal of the Surgeon General wherever he deems them most valuable, either in the United States or abroad.

5. Acceptance of commission is for five years, unless sooner relieved from active duty on recommendation of the Surgeon General, when officers will be placed on the inactive list. Active duty in the present instance will naturally be for the length of the war plus four months, which will be required for the necessary physical examinations to be made of the men before they are discharged from the Army. The old requirement of three years' service including at least 90 days' active service before being eligible for promotion, has been eliminated.

6. In case of death from causes in line of duty, the Government pays to the widow or designated beneficiary six months' pay of the grade held by the deceased at the time of death. The deceased's family is also entitled to a pension.

7. The limited number of quarters at the majority of stations and camps makes it inadvisable for officers of the Reserve Corps to be accompanied by their families unless they can provide for them independently.

8. In no event will the families of officers be allowed to accompany them abroad.

9. Officers in the Medical Reserve Corps under the age of 45 years will be called for training in the medical officers' training camps. This is for the purpose of giving intensive training in administrative duties, a requirement for military service. Men over 45 years, if they so elect, may attend a medical officers' training camp. If a surgeon has had military training, he may be called, without camp instruction, for active duty.

The following paragraphs are added from a letter from the Surgeon General to the chairman of the State committees of the medical section, Council of National Defense:

"1. It is believed that it would be of great advantage to this department if each State committee would make a census of its State, with a view of dividing the medical profession into two classes: (a) those who can not be spared for Army service because of their importance to the civil community, and (b) those who can be spared. Class (a) should be requested to refrain from offering their services. Class (b), on the contrary, should be encouraged promptly to apply for appointment. This office is frequently called upon to give advice along these lines in individual cases, but the department does not care to assume this responsibility, believing as it does that the question is one that can much better be decided by the State committee, acting in conjunction with the county committees.

"2. The department will not feel called upon to consult the list prepared under paragraph 1 when individual applications are received, since it will be assumed in all cases that the individual offering himself can be spared and will be at the disposal of the department for such duty as the exigencies of the service may demand.

"3. For the purpose of this census the State committee should act as a clearing house for the county committees.

"4. Frequently inquiries are made as to whether a medical officer will be assigned to duty in accordance with his medical specialty. In this connection attention is invited to the fact that a large proportion of the administrative work of the Medical Department of the newly organized Army will fall upon the officers of the Medical Reserve Corps. The officers of the regular establishment are so few in number that they will be available for only the most important administrative positions. With this in mind, it will be readily understood that officers of the Reserve Corps must largely supplement their technical knowledge by a clear conception of military co-ordination and administration before they can be of the greatest service to the department.

"5. They should offer themselves without reservation, considering their medical training as the basis upon which to build their education as medical officers.

"6. It is true, nevertheless, that all officers of the Reserve Corps are card indexed according to their special qualifications and that when the Army is fully organized and working smoothly every effort will be made to assign each officer where his special qualifications will be most useful to the Government and where the work will be congenial to the officer himself.

"7. The department has at its command at present only about one-fourth the number of officers that will be required for an Army of 2,000,000 men. By the application of the selective draft the full quota can probably be raised without great difficulty. It will be more creditable to the profession, however, to attain this end by voluntary offer of service.

"8. A great deal of inconvenience has been caused those applying for appointment in the Medical Reserve Corps by reason of the delay in issuing commissions. The business of the War Department has expanded so rapidly that it has been impossible to secure the necessary additional assistance required to handle the work. The delay has occurred in this office as well as in the office of the Adjutant General. This condition is being remedied as fast as circumstances permit."

New Alignment of Medical and Surgical Service.

The physical disasters which the present war occasions are more severe and more specialized than those of any other war of which history makes record. In order that these disasters be mitigated and checked, it is evident that there must be a new alignment of medical and surgical service. The men who fight have a right to expect that the physical distress which such combat entails shall be alleviated by means as scientifical-

ly accurate as those which can be commanded by the civil population.

To this problem the Surgeon General has addressed himself, and, with the sympathetic interest and support of the medical section of the Council of National Defense, has authorized, as one of the many means to be employed in this regard, the formation of units devoted to the surgery of the head, to wit, the surgery of the brain; the surgery of the eye; the surgery of the ear, nose, throat; and the surgery of the mouth.

The justification of the organization of such units resides in the fact that their component parts represent special departments of surgery which in recent years have made such notable advances that their practice, conducted by those who are trained along these special lines, has become an essential part of the scheme of general medical neurological and surgical work, and especially of military surgery in the widest acceptation of that term. They are gathered thus into one unit because they represent a natural selection, each supplementing and aiding the other in an effort to restore the individual to physical well-being.

More than this, they lend to the departments of general surgery, of general medicine, and of neurology a refinement and precision in diagnosis which in many problems is the essential forerunner of satisfying medicinal and operative therapeutic results. The vital necessity of opthalmoscopic examination by the opthalmologist in the work of the brain surgeon; the need of prompt release by the brain surgeon of increased intracranial pressure to save eyesight; the value of expert examination of the ears by the trained otologist in the elucidation of the problems of neurology and cerebral surgery; the need of search by the expert rhinologist and oral surgeon for foci of infection in the accessory sinuses, the tonsillar tissues, and the dental areas—in short, the investigation of what has aptly been called the entire cephalic mucous membrane—are so well known that it is useless to elaborate the catalogue or further emphasize the facts. For years this type of specialized and expert work has been at the disposal of the practice of medicine and surgery in civil life; for the first time in history it has become an integral part of the practice of military medicine and surgery.

Evidently the service of such specialized surgery as has been described may proceed along three lines:

1. Immediate service, or what is ordinarily known as first aid, to be given at the first dressing station. Time is of vital importance in dealing with many head injuries, involving lesions of its special organs, notably of the eye, and many eyes have been saved which otherwise would have been lost where it has been possible to act at once. As to the accuracy of this statement, all eye surgeons who have been at the front, will testify.

2. Later service in the base hospital where all operative procedures of these types of special surgery can be brought into deliberate action. The triumphs of oral surgery in particular are matters of common knowledge and of scientific record, and the same is true of the procedures of cerebral surgery and of those of the eye and ear.

3. Final service in special hospitals devoted to reconstruction and reeducation. In such hospitals the work of the department of the surgery of the head will find and has found one of its widest and most important fields of action, not only in individual work but in the work devoted to those who must be trained for special duties in these regards. For the purpose of making a personnel available for the tasks which have been briefly outlined, a committee has been formed which has mobilized the material according to the plans which follow.

Military Orthopedics.

The very large percentage of the casualties of the present war which require special orthopedic methods in their treatment (from 30—40%) and the large percentage of these cases, when so treated, that can be restored to military usefulness (from 70—75%) has led the Surgeon General to create an organization to care for these cases. This will be designated the department for military orthopedics and will have to do with the work that is required both at home and abroad.

Maj. Elliot G. Brackett, Medical Reserve Corps, has been appointed director of military orthopedics, with headquarters at the Surgeon General's Office.

Maj. David Silver, Medical Reserve Corps, has been appointed assistant director of military orthopedics, with the same headquarters as the director.

For the expeditionary forces, while the work will be under the authority of the director, nevertheless so much special organization will be required that the office of director of military orthopedics for the expeditionary forces has been created, and Maj. Joel E. Goldthwait, Medical Reserve Corps, has been appointed to fill that position.

Associated with him and to serve as assistant directors, Maj. Robert B. Osgood, now serving with United States Base Hospital No. 5, and Capt. Nathaniel Allison, now serving with United States Base Hospital No. 21, will be transferred from their present positions to this department. Maj. Osgood will be temporarily assigned to Col. Robert Jones, the director of military orthopedics for the British forces, for the study of details of organization and methods of treatment, and Capt. Allison will be temporarily assigned to similar study with the French and Italian forces.

For the assistance of the directors, an advisory orthopedic board has been created and is made up as follows: Dr. Robert W. Lovett, Boston, Mass.; Dr. Albert F. Freiberg, Cincinnati, Ohio; Dr. G. Gwillym Davis, Philadelphia, Pa.; Dr. F. H. Alber, New York, N. Y.; and Dr. John L. Porter, Chicago, Ill.

The classifications adopted, of the conditions to be considered orthopedic, is practically the same as that in use by the British Government, and is as follows:

(a) Derangements and disabilities of joints, including anchylosis.

(b) Deformities and disabilities of the feet, such as hallux valgus, hallux rigidus, hammer toes, metatarsalgia, painful heels, flat or claw feet.

(c) Malunited or ununited fractures.

(d) Injuries to ligaments, muscles, and tendons.

(e) Cases requiring tendon transplantations or other treatment for irreparable destruction of nerves.

(f) Nerve injuries, complicated with fractures or stiffness of joints.

(g) Cases requiring surgical appliances, including artificial limbs.

Since prescribed and regulated work is one of the most valuable therapeutic agencies that is in use in the great orthopedic hospitals abroad, the development of the so-called curative workshop is a natural part of the general orthopedic equipment, and since the reeducation and training for industry is a natural development of this, a special advisory committee, to be called the Active Vocational Board, has been appointed and is as follows: Dr. Royal Meeker, labor; Dr. David Edsall, medico-vocational; Mr. John E. Wilder, industrial and employment; Mr. Charles E. Stone, industrial and employment, and Dr. Dean Lewis, general surgery.

Committee of Women Physicians.

By way of further recognition of women in the work of prosecuting the war the Council of National Defense has added to the general medical board a committee of women physicians, of which Dr. Rosalie Slaughter Morton, of New York City, has been appointed chairman.

Need for utilizing the services of women physicians of the country has been more and more apparent to the council, as it is felt they can accomplish much in the way of anaesthesia laboratory work and sanitation. The medical board at present is engaged in formulating plans under which the new committee is to operate, and it is expected that these will be completed within a very short time.

The other members of the committee are Drs. Caroline M. Purnell, Caroline Towles, Florence N. Ward, Mary Lapham, Emma B. Culbertson, Cornelia C. Brant, and Marion Craig Potter.

PROVISIONAL SANITARY TRAIN.

The personnel of the officers of the Provisional Sanitary Trains at the Presidio is as follows:

Field Hospital No. 11—Captain H. H. Sharpe, Director of train; Major Eugene S. Kilgore, commanding; Captain Fred D. Fairchild, enlisted personnel; Captain Herlwyn R. Greene, Capain Robert K. Hutchings, Captain Gilbert M. Barrett, Captain Frank D. Dickson, Captain Gustav J. Bergener, Captain Harry E. Clay, Captain Sidney E. D. Pinninger, Captain Bon O. Adams, Major Alanson Weeks.

Field Hospital "A"—Captain Frederick W. Townsend, Lieutenant George K. Herzog, Lieutenant William L. Moore, Lieutenant George M. Hubbell, Lieutenant Glover B. Wilcox, Lieutenant H. M. Fine, Lieutenant Chas. H. Freeman, Lieutenant O. Andersen.

Field Hospital "C"—Captain Charles Cross, commanding; Lieutenant Frank P. McManus, Lieutenant Jay M. Read, Lieutenant John L. Beard, Lieutenant Pleasant A. Taylor, Lieutenant N. P. Barbour.

Ambulance Co. No. 2—Lieutenant Samuel R. Norris, commanding; Lieutenant Lionel D. Prince, Lieutenant Harry E. Foster, Lieutenant Frank N. Stiles, Lieutenant Luther M. Leisenring, Lieutenant John Boyer, Lieutenant Chas. Adams.

Ambulance Co. "A"—Captain Frederick W. Kroll, commanding; Lieutenant Robert K. Hackett, Lieutenant Michel Etcheverry, Lieutenant Lafayette Wilson, Lieutenant Charles E. Mordoff.

Ambulance Co. "C"—First Lieutenant Cyril E. Lewis, commanding; First Lieutenant John George Harrington, First Lieutenant Ezra R. Bridge, First Lieutenant Frank S. Cook, First Lieutenant John E. Best, First Lieutenant Henry Ehlers.

Post-Graduate School.

A post-graduate school for naval surgeons has been established at the Lane Hospital, San Francisco. The faculty is composed entirely of naval surgeons and is as follows: Surgeon George Rothganger, U. S. N. (Ret.); Passed Asst. Surgeons F. M. Shook, U. S. N. (Ret.); R. G. Brodrick, U. S. N. (Ret.); Hans Barkan, U. S. N. R. F.; W. W. Boardman, U. S. N. R. F.; W. F. Schaller, U S. N. R. F.; Assistant Surgeons A. C. Reed, U. S. N. R. F.; George Barnett, U. S. N. R. F.; Chief Pharmacist's Mate Wm. Meehan (Instructor in Drills).

The course of study includes special training in naval medicine, surgery, hygiene, specialties and drills, and lasts over a period of six weeks. The first session closed on September 5th, and was attended by twenty-one Assistant Surgeons. A second session began Monday, September 10th, and is attended by sixteen more naval medical officers.

Brain Surgeons.

For the purpose of discussing problems of brain surgery, the joint committee of opthalmology and oto-laryngology held a conference July 14, 1917, room 312, Munsey Building, Dr. C. W. Richardson presiding. In addition to the members of the committee, there were present, by invitation, Dr. Dean De Witt Lewis, of Chicago; Dr. Charles H. Frazier, of Philadelphia; and Dr. Charles A. Elsberg, of New York.

At this conference a general plan of organization of the broin surgery section was discussed. District boards were established by the selection of a prominent surgeon and neurologist for districts of one or more States throughout the Union. A circular letter has been sent to members of these boards soliciting their co-operation and requesting names of surgeons in their districts capable of doing brain surgery.

A tentative plan was outlined for the establishment of schools for the instruction of surgeons classified in the brain surgery section. If necessary, these schools can be established in Chicago, Baltimore, Philadelphia, and New York. In each instance they can be directed by an eminent brain surgeon and a large amount of material for instruction will be available. The course will be arranged along an anatomical, clinical, and operative line and will extend over a period of from four to six weeks.

Internes and Medical May Join the Enlisted Reserve Corps and Be Discharged by Local Board from Service in the National Army.

The Provost Marshal General has sent the following to governors of all States:

The President prescribes the following Suplemental Regulations governing the execution of the selective-service law.

First. Hospital internes who are graduates of well-recognized medical schools or medical students in their fourth, third or second year in any well-recognized medical school who have not been called by a local board may enlist in the Enlisted Reserve Corps provided for by section 55 of the national defense act under regulations to be issued by the Surgeon General, and if they are thereafter called by a local board they may be discharged on proper claim presented on the ground that they are in the military service of the United States.

Second. A hospital interne who is a graduate of a well-recognized medical school or a medical student in his fourth, third, or second year in any well-recognized medical school, who has been called by a local board and physically examined and accepted and by or in behalf of whom no claim for exemption or discharge is pending, and who has not been ordered to military duty, may apply to the Surgeon General of the Army to be ordered to report at once to a local board for military duty and thus be inducted into the military service of the United States, immediately thereupon to be discharged from the National Army for the purpose of enlisting in the Enlisted Reserve Corps of the Medical Department. With every such request must be enclosed a copy of the order of the local board calling him to report for physical examination (Form 103), affidavit evidence of the status of the applicant as a medical student or interne and an engagement to enlist in the Enlisted Reserve Corps of the Medical Department.

Upon receipt of such application with the named inclosures the Surgeon General will forward the case to The Adjutant General with his recommendations. Thereupon The Adjutant General may issue an order to such interne or medical student to report to his local board for military duty on a specified date, in person or by mail or telegraph, as seems most desirable. This order may issue regardless of the person's order of liability for military service. From and after the date so specified such person shall be in the military service of the United States. He shall not be sent by the local board to a mobiliza-

tion camp, but shall remain awaiting the orders of The Adjutant General of the Army. The Adjutant General may forthwith issue an order discharging such person from the military service for the convenience of the Government.

Three official copies of the discharge order should be sent at once by The Adjutant General to the local board. Upon receipt of these orders the local board should enter the name of the man discharged on Form 164A and forward Form 164A, together with two of the certified copies of the order of discharge, to the mobilization camp to which it furnishes men. The authorities at the mobilization camp will make the necessary entries to complete Form 164A, and will thereupon give the local board credit on its net quota for one drafted man.

The American Ambulance Hospital has become the first American military hospital in France, and by action of its board of directors in Paris, is hereafter to be administered by the United States Army under the immediate supervision of the American Red Cross. It will be known as the American Military Hospital.

Notice

The following pamphlets may be obtained, post prepaid, at the price indicated from the American Medical Association, 535 North Dearborn street, Chicago, Ill. Every doctor should have a full set and circulate them as widely as possible.

"Nostrums and Quackery" (Second Edition).

For some years the Journal of the American Medical Association has published articles dealing with quackery and the "patent medicine" evil. While the claims and methods of the medical fakirs have been investigated and exposed by the Journal, the Association's chemists have analyzed the various preparations put out by these concerns and thus made plain the speciousness of their claims. All this and much additional matter has been brought together, elaborated and freely illustrated to make the book "Nostrums and Quackery," which is issued in a permanent and attractive form, bound in green cloth, stamped in gold. More than 700 pages; over 300 illustrations. Price, $1.00.

"The Great American Fraud," by Samuel Hopkins Adams. (Fifth enlarged edition.) Price, paper cover, 25 cents; cloth cover, 50 cents.

"Cancer Cure" Frauds. Illustrated; 6 cents.

"Consumption Cures." Illustrated; price 20 cents.

Convictions under the Food and Drugs Act. Illustrated; price 15 cents.

Cosmetic Nostrums. Illustrated; price 10 cents.

"Deafness Cures." Illustrated; price 10 cents.

"Epilepsy Cures." Illustrated; price 10 cents.

"Female Weakness Cures." Illustrated; 15 cents.

Medical Institutes. Illustrated; price 20 cents.

Medical Mail-Order Frauds. Illustrated; price 10 cents.

"Men's Specialists." Illustrated; price 10 cents.

Miscellaneous Nostrums. Illustrated; price 15 cents.

Nostrums for Kidney Disease and Diabetes. Illustrated; price 10 cents.

"Obesity Cures." Illustrated; 10 cents.

Sanatogen. Illustrated; price 10 cents.

Some Quasi-Medical Institutions. Illustrated; price 10 cents.

Some Mechanical Cure-Alls. Illustrated; price 10 cents.

Some Miscellaneous "Specialists." Illustrated; price 10 cents.

"At the Bar of Public Opinion." Price 10 cents. This is a collection of quoted opinions from newspapers and magazines on the subject of the nostrum evil and quackery. The criticisms, coming from sources which might be financially benefited if they kept silent, are of particular interest.

New booklet, "The Production of Pure Milk," containing the milk law with new amendments, is now ready for distribution.—(State Board of Health Bulletin.)

MEDICAL LECTURES.

The sixteenth course of Lane medical lectures will be delivered by Simon Flexner, M. D., LL. D., director of laboratories, Rockefeller Institute for Medical Research, New York City, N. Y., on the evenings of October 8, 9, 10, 11 and 12, 1917, at 8:15 o'clock in Lane Hall, Stanford University Medical School, Sacramento street, near Webster, San Francisco, Cal. The medical profession and students of medicine are cordially invited to attend.

The titles of the lectures to be given by Dr. Simon Flexner are as follows:

Physical Basis and Present Status of Specific Serum and Drug Therapy.

October 8, 1917, Lecture I—Epidemic Meningitis; Lobar Pneumonia; Bacillary Dysentery and Specificity in Bacterial Sera.

October 9, 1917, Lecture II—Gaseous Gangrene; Shiga Bacillary Dysentery; and the Principles of Homoserum Therapy.

October 10, 1917, Lecture III—Poliomyelitis and the Principles of Homoserum Therapy.

October 11, 1917, Lecture IV—Local Specific Therapy as illustrated by the Serum Treatment of Epidemic Meningitis, Poliomyelitis and Tetanus.

October 12, 1917, Lecture V—Chemotherapy of the Spirochetal Infections.

State Board of Health

BUREAU OF VENEREAL DISEASES.

The State will co-operate with the army and navy in reducing venereal diseases in the men stationed in California to a minimum. To do this it will be necessary to prevent these diseases in the civil population near army and navy posts, and to extend the work as rapidly as possible throughout the State.

To carry on this work it was recommended to Governor Stephens, on August 13th, by the Military Welfare Commission that a Bureau of Venereal Diseases be established under the State Board of Health and that $60,000 be appropriated from war emergency funds for its support during the next two years. The delegation which laid the plan before the Governor included Mr. Warren Olney, Jr., and Dr. Millbank Johnson of the State Military Welfare Commission, Colonel Lynch of the United States Army, Lieutenant James E. Miller of the United States Navy, and Doctors George E. Ebright and Wilbur A. Sawyer of the State Board of Health. The plan met with the hearty approval of the Governor, and work will be begun immediately.

The functions of such a Bureau have been tentatively outlined as follows:

Direct Control.

1. To secure the reporting of cases of syphilis and gonococcus infection, together with the probable sources of infection, by physicians and by the medical officers of the army and navy.

2. To investigate, with the assistance of local officials, any suspected foci of infection and to isolate infectious persons whenever it is necessary to prevent their spreading disease.

3. With the co-operation of cities and counties to care for the men and women isolated on account of venereal disease in public isolation hospitals until the patients are no longer infectious.

4. As far as possible to secure the medical

examination for venereal diseases of male and female prisoners and other appropriate groups, and to provide for their isolation and treatment so that they will not spread disease when released.

5. Through the operation of this plan to prevent the heretofore common evil of one community "passing on" to another its undesirables, thereby multiplying foci of infection.

6. To focus on this subject the social forces necessary to give former prostitutes, after they have been put into good physical condition, an opportunity to enter into productive occupations under conditions fair to themselves and to the community.

Public Opportunities for Diagnosis and Treatment.

1. To investigate all clinics or hospitals treating venereal diseases and to bring into existence adequate day and evening clinics and opportunities for hospital treatment for syphilis and gonorrhea.

2. To make a list of accredited clinics in which venereal diseases are treated, accrediting only those which reach high standards in staffs, equipment and results.

3. To purchase and issue, without charge, to approved public hospitals and clinics, salvarsan or approved substitutes, for use in making cases of syphilis non-infectious in the shortest possible time.

4. To arrange with city laboratories to give free diagnostic tests for syphilis and gonococcus infections, and to encourage the more general use of the free Wassermann tests and other tests available at the Bureau of Communicable Diseases.

Educational.

1. To issue printed pamphlets, cards and placards of information relative to the prevention of venereal disease, and to co-operate with the army and navy and other agencies in giving talks to appropriate groups.

2. To co-operate with the Military Welfare Commission in the suppression of prostitution as the principal source of venereal diseases, but avoiding confusion of the campaign against venereal diseases with the movement against vice as a strictly moral issue.

3. To oppose any local plan for licensing prostitution or issuing certificates of health to prostitutes, by showing that this is in conflict with modern methods of control of venereal diseases, and to substitute the above program, which is entirely consistent with the suppression of prostitution.

State Board of Medical Examiners

Attention has been called to the alleged violation of certain Japanese who, we understand, are practicing medicine and surgery in this state without the formality of obtaining a license issued by this board, as provided in Statutes of 1913, Chapter 354, effective August 10, 1913; Statutes of 1915, Chapter 105, effective August 8, 1915, and Statutes of 1917, Chapter 81, effective July 27, 1917.

Section 17 of Chapter 81, Statutes of 1917, provides, that any individual practicing, or who holds himself out as practicing, any system of the healing art in California, without being the possessor of a certificate issued by this board, is violating the Statutes of this State. In the amendments effective July 27, 1917, is a provision wherein the applicant before this board may write his examination in a foreign language, providing the expenses of the interpreter or translater are borne by such applicant. This expense is to be in addition to the regular $25.00 fee exacted in the Medical Practice Act of each applicant for written examination. The Board has determined that the selection of an interpreter will be made in such manner that any collusion between the applicant and the interpreter may be avoided. The plan of the board will be to conceal the name of the interpreter until such time as the applicant presents himself in the examination room. The applicant may write his examination papers in Japanese and the translator, seated at the same table, will transcribe them into English; both of these books of answers will then be retained by the board and subject to revision, if necessary, by a second translator. This board will use every endeavor to have these examinations conducted with absolute fairness and impartiality. We have been advised that interpreters, or translators, may be obtained for $10.00 per day, and inasmuch as the examination covers a period of three days, or perchance, four days, the cost to the applicant, in addition to the $25.00 above mentioned, will be $30 or $40.00, depending on whether three or four days may be consumed in the writing of the examination.

The following plan was adopted:

First: That there be one interpreter for each foreign applicant.

Second: That each applicant bear the expense of the interpreter. That the papers be translated at the same time the examinee is writing the specific papers, the idea being to prevent the papers being taken from the room where the examination is held.

Third: The recommendation that the applicant complete a paper and commence the second paper prior to the translator beginning work on the first paper, after discussion, was deemed impractical, inasmuch as should the examination close at 6:00 p. m., there would be a possibility of the last paper written by the applicant being translated after the watchers had left the examination room.

Fourth: That the original papers and the translated copies be filed permanently with the Board as a matter of record.

Fifth: That the interpreter be selected through conference with the foreign Consul, either in Los Angeles or in San Francisco, wherever the meeting may be held.

Sixth: The foreign Medical Society reports that an interpreter can be secured to translate the entire set of papers for $10.00 per day of service.

Seventh: It was recommended that the interpreter and applicant be permitted to use a small dictionary to assist in translating from the specific foreign language into English. The representative of the society agreed to recommend such a dictionary.

Eighth: It was further recommended that the interpreter be a layman rather than a medical man, thus obviating any criticism that the interpreter might be accused of professional jealousy should the applicant be unsuccessful in passing the examination.

Ninth: Providing the Board deems it expedient to engage an extra watcher for the examination of an applicant who writes the examination in a foreign language, the expense of such watcher will be borne by the applicant.

RECORD OF EXAMINATIONS BY THE STATE BOARD OF MEDICAL EXAMINERS, JULY, 1917.

Stanford University School of Medicine—Class A.

No. examined, 2; percentage of exams. passed: 81-3/9; 88-2/9

None failed.

University of California Medical School—Class A.

No. examined, 1; percentage of exams. passed: 91

None failed.

Oakland College of Medicine & Surgery—Class B.

No. examined, 3; percentage of exams. passed: 90-4/10; 86-3/9; 90-1/9

None failed.

College of Medical Evangelists, Loma Linda—Class C.

No. examined, 8; percentage of exams. passed: 80-4/9; 91; 83; 92-2/9; 87-1/9; 75-7/9 87-7/9; 87-1/9.

None failed.

College P. & S. Univ. So. Calif.

No. examined, 46; percentage of exams. passed:

98% { 86-2/9; 87-5/9; 81-2/9; 84-1/9; 78-3/9; 85-3/9; 88-1/9; 85-8/9; 91-6/9; 84-3/9; 87-7/9; 85-8/9; 80-5/9; 84-4/9; 80-6/9; 86-1/5; 88-1/9; 86-1/9; 87-4/9; 86; 77-4/9; 78-6/9; 86-2/9; 81-5/9; 76-1/9; 93-6/9; 92-7/9; 78-3/9; 92- ; 86-3/9; 88-4/9; 85-2/9; 82-1/9; 90-5/9; 83-2/9; 92- ; 81-5/9; 84-5/9; 92-2/9; 91-7/9; 89- ; 88-7/9; 83-7/9; 87-1/9; 88-2/9;

2% of exams. failed: 70-3/9.

College O. P. & S., Los Angeles.

No. examined, 17; percentage of exams. passed: 17%. 75-2/9; 84; 79-7/9;

Percentage of exams. failed:

83% { 73-2/5; 65-2/9; 64-3/9; 66-3/9; 69-2/9; 51-7/9; 49-2/9; 59-4/9; 52-6/9; 48-6/9; 69-1/9; 69-5/9; 71-5/9; 69-3/9; 70-3/9; 71-2/9;

Cal. Eclectic Medical College.

No. examined, 1—Failed: 71-2/9%.

Cornell Univ. Med. Coll., N. Y.

No. examined, 1—Passed: 90%.

Univ. of Penn., Phila., Pa.

No. examined, 1—Failed: 86-4/9%.

Harvard Univ., Cambridge, Mass.

No. examined, 1—Passed: 86-8/9%.

Edinburgh Univ. Med. Dept., Scotland.

No. examined, 1—Passed: 92-1/9%.

University of Illinois, Chicago, Ill.

No. examined, 1—Passed: 86-2/9%.

STATE BOARD OF MEDICAL EXAMINERS.

July 10, 1917. San Francisco.

Anatomy and Histology.
W. R. MOLONY, M. D.
9 to 11 a. m., July 10, 1917.

(For Physician and Surgeon and 2,000 Hours Applicants.)

1. Give origin of all of the muscles which pass across the hip joint, that is, those that have the joint between the origin and insertion.
2. Describe the attachment of the ribs to the vertebral column.
3. Describe the olfactory system; mucous membrance, olfactory nerves, olfactory bulb and cerebral connections.
4. Describe fully the spinal accessory nerve; phrenic nerve.
5. Describe fully the location, formation and distribution of the deep and superficial cardiac plexes.
6. Describe in detail each variety of epithelium found in the urinary tract beginning at the glomerulus and ending at the meatus urinarus.
7. Discuss the palmar fascis.
8. Discuss the arch of the foot; how formed and how maintained.
9. Locate five important groups of lymph glands and give drainage area.
10. Discuss the mesentary. Name subdivisions; locate each; describe the largest.
11. Discuss the clavicle—connection anad relations.
12. Discuss erectile tissue and tell all places found in the body.

Answer ten questions only.

Anatomy and Histology.
W. R. MOLONY, M. D.
9 to 11 a. m., July 10, 1917.
(For 1,000 Hours Applicants Only.)

1. Describe the rectum.
2. Describe the sternum.
3. Describe white blood cells.
4. Describe psoas magnus muscle.
5. Give distribution of the musculeo-spiral nerve.
6. Give the blood supply to the uterus.
7. Briefly describe the diaphragm.
8. Describe the wrist joint.
9. Briefly describe the cerebellum.
10. Locate the right kidney.
11. Locate the spleen.
12. Give the course and termination of the right and left spermatic vein.

Answer ten questions only.

Anatomy and Histology.
W. R. MOLONY, M. D.
9 to 11 a. m., July 10, 1917.
(For Chiropody Applicants Only.)

1. Give histology of skin.
2. Describe the os calcis.
3. Name the successive parts of digestive tract.
4. Give histology of bone.
5. Discuss bursae; name and locate all below knee.
6. Give lymph drainage of foot.
7. Give blood supply to foot.
8. What maintains the integrity of the arch of foot?
9. Name the ductless glands of the body; describe one.
10. Discuss flantan fascia.
11. Describe adipose tissue; how distributed in foot?
12. Briefly describe the circulation of blood.

Answer ten questions only.

Obstetrics and Gynecology.
R. A. CAMPBELL, M. D.
1 to 3 p. m., July 10, 1917.
(For Physician and Surgeon and 2,000 Hours Applicants.)

1. Describe the operation for complete laceration of the perineum a year or more after injury.
2. Describe the operation for the cure of a vesico-vaginal fistula.
3. Upon what would you base a diagnosis of extra uterine pregnancy before rupture.
4. Differentiate chancre, chancroid and herpes of the vulva.
5. After an abortion patient continues to bleed and has fever; give cause of bleeding and fever and describe treatment necessary for relief.
6. Given a case of placenta previa at term. Describe the method of procedure.
7. What are the external measurements of a normal pelvis? Use metric system.
8. Name the conditions which might be mistaken for pregnancy.
9. Name the conditions in which Caesarean section is indicated.
10. Discuss the menapause.
11. Describe the mechanism of labor in L. O. A. position.
12. When may pituitrin be used in labor with safety? What are the indications for its use? What are the contraindications?

Answer ten questions only.

Obstetrics and Gynecology.
R. A. CAMPBELL, M. D.
1 to 3 p. m., July 10, 1917.
(For 1,000 Hours Applicants Only.)

1. What changes occur in the uterus during pregnancy?
2. What is the normal duration of pregnancy? How is this duration calculated? Give example.
3. Name some of the conditions or diseases that might be mistaken for pregnancy.
4. How soon after the birth of the child should the cord be ligated? How ligated; describe its after care.
5. When would you use a douche following labor?
6. What are the dangers of a breech-presentation?
7. Name different positions of vertex. Which is the most frequent?
8. Describe care of the infant during the first 24 hours following birth.
9. Name the most common varieties of genital fistulae.
10. Why is gonorrhea in women a grave disease?
11. Name the most common growths affecting the uterus.
12. Give differential diagnosis between ascites and ovarian cysts.

Answer ten questions only.

Chiropody and Therapeutics.
R. A. CAMPBELL, M. D.
1 to 3 p. m., July 10, 1917.
(For Chiropody Applicants Only.)

1. Discuss infections of the nails.
2. Outline the treatment of onychia.
3. What would be your recommendation in a case of flat foot?
4. Outline the treatment of a corn occurring between the toes.
5. Discuss the treatment of callosities in a case of hammer toe.
6. Under what conditions of the feet would you advise the use of iodine?
7. Give treatment of excessive sweating of feet.
8. Give treatment of dryness and cracking of skin of feet.
9. Give treatment of ingrown nail.
10. Give treatment of bunion.
11. Name five important therapeutic agents used in chiropody. In what conditions are they indicated and why.
12. What therapeutic measures other than drugs or appliances are of use in the practice of chiropody?

Answer ten questions only.

Bacteriology and Pathology.
DR. D. L. TASKER.
3:30 to 6 p. m., July 10, 1917.
(For Physician and Surgeon Applicants.)

1. What are the causes of difference in the virulence of diphtheria? Describe an intradermic test for determining susceptibility to diphtheria.
2. Describe the lesions in valvular endocarditis; what are the most frequent sources of infection and name the common exciting agent.
3. Name three pathogenic cocci which are gram nega-

tive. Name two pathogenic bacilli which are gram positive.
4. Name three acute infectious diseases in which the relative number of leucocytes is increased and three in which they remain normal.
5. Describe the relationship between diabetes mellitus and the liability to grangrene and the slow and difficult repair of wounds and injuries.
6. On microscopic examination what characteristics tend to classify a morbid growth as malignant or benign?
7. What is the etiology of cholelithiasis and what pathologic changes may result in the gall bladder?
8. What may be the significance of an increased percentage of (1) polymorphonuclear leucocytes, (2) lymphocytes, (3) myelocytes?
9. Differentiate endogenous and exogenous intoxications.
10. How is the bacillus pestis transmitted to man?
11. Describe the life cycle of trichina spiralis.
12. Name three diseases caused by spirochaeta.

Answer ten questions only.

Pathology and Elementary Bacteriology.
DR. D. L. TASKER.
3:30 to 6 p. m., July 10, 1917.
(For 2,000 Hours Drugless Applicants Only.)

1. Define and give example: pyogenic, toxicogenic, parasitic, saphrophytic, chromogenic.
2. Describe the preparation of blood-serum culture medium.
3. Give method for staining acid-fast bacilli.
4. How does the reaction of media affect the functions of bacteria?
5. Describe the vital staining of protozoa with neutral red solution.
6. What characteristics differentiate yeasts, bacteria, protozoa?
7. Describe the lesions in valvular endocarditis; what are the most frequent sources of infection and name the common exciting agent.
8. Name three acute infectious diseases in which the relative number of leucocytes is increased and three in which they remain normal.
9. Describe the relationship between diabetes mellitus and the liability to gangrene and the slow and difficult repair of wounds and injuries.
10. On microscopic examination what characteristics tend to classify a morbid growth as malignant or benign?
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12. What may be the signficance of an increased percentage of (1) polymorphonuclear leucocytes, (2) lymphocytes, (3) myelocytes?

Answer ten questions only.

Pathology and Elementary Bacteriology.
DR. D. L. TASKER.
3:30 to 6 p. m., July 10, 1917.
(For 1,000 Hours Applicants Only.)

1. What is a gumma?
2. What diseases produce exostoses?
3. What pathological changes are found in acute anterior poliomyelitis?
4. What cells function as phagocytes?
5. Define (a) hypertrophy, (b) atrophy. Give examples.
6. What is an abscess?
7. Name five culture media.
8. What conditions are necessary for the growth of pathogenic organisms?
9. How do bacteria reproduce themselves?
10. What are bacterial toxins?
11. How do bacteria differ as to shape?
12. Give a method for staining bacteria.

Answer ten questions only.

Pathology and Bacteriology.
DR. D. L. TASKER.
3:30 to 6 p. m., July 10, 1917.
(For Chiropody Applicants Only.)

1. Describe the pathology which characterizes a bunion.
2. Why do cases of locomotor ataxia sometimes exhibit ulcerations on the soles of the feet?
3. What forms of infection are most frequently found around the toenails?
4. How does the skin of the feet react to abnormal pressure and friction?
5. What produces ingrowing toenails?
6. How is the contact area of the plantar surface altered by weakness of the transverse arch?
7. What is an ulcer?
8. What is a fistula and what does it signify?
9. What are the constitutional signs of infection?
10. What is gangrene and what disease sometimes exhibits it in the toes?
11. How can skin areas be sterilized?
12. What is a pathogenic organism?

Answer ten questions only.

Physiology.
10 a. m. to 12 m., July 11, 1917.
DR. ERNEST SISSON.
(For Physician and Surgeon and 2,000 Hours Drugless Applicants.)

1. Describe the functional relation of nerve and blood supply of kidney.
2. Discuss the thyroid gland.
3. Describe the nerve tract of efferent and afferent communication to the intestines.
4. Describe the coronary circulation.
5. Discuss pulse wave and velocity of blood stream.
6. Describe the effect of section of the trigeminus nerve on blood vessels in the area of its distribution.
7. What influences the quantity of carbon dioxide given off and oxygen consumed.
8. Why does dilute hydrochloric acid remain in the stomach much longer than water?
9. What is understood by an harmone?
10. What influence do the upper motor neurones have over the lower neurones? Demonstrate by diagram of reflexes.
11. Describe the refractory period of heart muscle and its physiological importance.
12. Give the physiology of the adrenal bodies and describe their divisions.

Answer ten questions only.

Physiology.
DR. ERNEST SISSON.
10 a. m. to 12 m., July 11, 1917.
(For 1,000 Hours Drugless Applicants.)

1. Describe the pulmonary circulation.
2. Describe the heart and its action.
3. Describe the mechanism of respiration.
4. What effect has change of temperature on action of kidneys?
5. Describe the digestion of starch.
6. Describe the thoracic duct and its function.
7. What are afferent and efferent impulses?
8. What is the cause of muscular fatigue?
9. Describe the valves in the digestive tract and their action.
10. Name and locate three ductless glands.
11. Describe the patellar reflex.
12. Describe the function of the skin.

Answer ten questions only.

Physiology, Chemistry and Hygiene.
DR. ERNEST SISSON.
10 a. m. to 12 m., July 11, 1917.
(For Chiropody Applicants Only.)

1. Describe the pulmonary circulation.
2. Describe the heart and its action.
3. Describe the mechanism of respiration.
4. What effect has change of temperature on action of kidneys?
5. Describe the digestion of starch.
6. Describe the thoracic duct and its function.
7. What are afferent and efferent impulses?
8. What is the cause of muscular fatigue?
9. Give a simple method of ventilating a sick room without exposing patient to draughts.
10. Name some occupation that predispose to disturbances of the feet.
11. Of what diagnostic value would you attach to the finding of sugar in urine?
12. Give chemical analysis for detection of albumen in urine.

Answer ten questions only.

Hygiene and Sanitation.
H. V. BROWN, M. D.
1 to 3 p. m., July 11, 1917.
(For Physician and Surgeon and 2,000 Hours Applicants.)

1. What tests would you use to determine whether or not a specimen of raw meat was suitable for food?
2. What do you understand by the "hypochlorite" treatment of drinking water? How is it applied? Discuss its efficiency.
3. What diseases may be spread by the house fly? Discuss the most effective means of preventing the increase of flies.
4. Discuss the epidemiology of infantile paralysis.
5. Describe and discuss the disposal of waste material from a mountain resort accommodating sixty people.
6. (a) What do nitrates indicate when found in water supply in quantity.
   (b) What do nitrites indicate when found in water supply in quantity?
7. What diseases are borne by the mosquitoes? Discuss the parasitology, incubation and prevention of any one of them.
8. Name three preservatives commonly added to milk. Give tests for identification of two of them.
9. Discuss the epidemiology of trichiniasis.
10. What is meant by the term "ground water"? Discuss its source, level, flow, advantages and disadvantages as a public water supply.
11. What is "certified milk"?
12. Discuss the rationale of typhoid vaccination and explain the effects produced according to Ehrlich's theory of immunity.

Answer ten questions only.

Hygiene and Sanitation.
H. V. BROWN, M. D.
1 to 3 p. m., July 11, 1917.
(For 1,000 Hours Drugless Applicants Only.)

1. What diseases may be spread by the house fly?
2. Describe the proper water supply for a valley town of 2,000 inhabitants.
3. Name some of the diseases due to microorganisms.
4. What relation should the quantity of vegetable food, including starch and sugar, bear to animal food consumed in 24 hours?
5. What points should be considered in buying fresh and green vegetables and fruits.
6. Outline the methods of meat inspection.
7. How is typhoid fever most frequently conveyed and how may typhoid germs be destroyed?
8. How may bed clothing be disinfected?

9. Name and describe three of the contagious diseases characterized by rash.
10. Discuss the disposal of sewage in a valley town of 2,000 inhabitants.
11. Discuss the disposal of garbage from a large military camp.
12. What measures should be used to safeguard the milk supply of a large city.

Answer ten questions only.

Surgery.

P. T. PHILLIPS, M. D.

3:30 to 6 p. m., July 11, 1917.

(For Physician and Surgeon Applicants.)

1. Discuss briefly the uses of spinal anesthesia, giving technique.
2. Give the essentials of the treatment of bacillus aerogenes capsulatus (Welch) infection.
3. Under what conditions would you advise a simple mastoid operation? What are essential differences between simple and radical operations?
4. Describe causes, symptoms and treatment of displacement of semilunar cartilages of knee joint.
5. When would you advise amputation in a crushing accident?
6. Give diagnosis, and describe operation for congenital pyloric hypertrophy with stenosis.
7. Discuss briefly, glaucoma, its symptoms and diagnosis with some generally accepted methods of treatment.
8. Outline treatment throughout course of severe acute gonorrheal urethritis in the male. What complications may arise?
9. State five common causes of obstructed nasal breathing with treatment of each.
10. Give treatment in detail of simple fracture both bones middle of leg.
11. Give symptoms, causes and treatment of subphrenic abscess.
12. What symptoms would lead you to think that a patient was suffering from a concealed hemorrhage after a laparotomy?

Answer ten questions only.

Orthopedics and Surgery.

P. T. PHILLIPS, M. D.

3:30 to 6 p. m., July 11, 1917.

(For Chiropody Applicants Only.)

1. (a) Describe in detail the use of one local anesthetic.
   (b) Of one antiseptic solution.
   (c) Of one antiseptic powder.
2. Name theories of cause of congenital talipes. Name causes of acquired.
3. Describe fissures. Give treatment.
4. Describe pes cavus. Give causes and treatment.
5. Define and discuss briefly causes of gangrene. How should it be treated?
6. Describe nervo-vascular growths. Give treatment.
7. How would you treat an infected corn?
8. Define sprain. How would you treat a simple sprain of the ankle joint?
9. Discuss briefly enlarged joints with reference to their cause and treatment.
10. What factors are involved in producing varicose veins?
11. Discuss bursitis, giving causes and treatment.
12. Give the differential diagnosis between a fracture and a dislocation.

Answer ten questions only.

General Medicine, Including Clinical Microscopy.

H. E. ALDERSON, M. D.

10 a. m. to 12 m., July 12, 1917.

(For Physician and Surgeon Applicants Only.)

1. Discuss briefly the etiology and diagnosis of general paresis.
2. Discuss the etiology, pathology and diagnosis of lupus vulgaris.
3. Outline briefly the modern accepted treatment of lues in the primary phase.
4. Discuss briefly the etiology, diagnosis and prognosis of diabetes mellitus in a man 40 years of age.
5. Discuss the etiology, diagnosis and prognosis of acute oedema of the larynx in a woman 35 years of age.
6. Discuss the significance of an increase in blood platelets.
7. Discuss the clinical and laboratory diagnosis of bacterial endocarditis.
8. Discuss the clinical and laboratory diagnosis of "pin worms."
9. Discuss briefly the diagnosis and prognosis of chlorosis.
10. Discuss fully the differential diagnosis between the primary sore of lues and chancroid.
11. Define leukaemia and discuss its diagnosis.
12. Discuss the etiology, diagnosis and prognosis of typhus.

Answer ten questions only.

General Diagnosis.

H. E. ALDERSON, M. D.

10 a. m. to 12 m., July 12, 1917.

(For 2,000 Hours Drugless Applicants Only.)

1. Discuss the possible significance of vertigo in a man twenty years old.
2. Discuss the diagnosis of Jacksonian epilepsy.
3. Discuss the significance of cardiac arrythmia.
4. Discuss the significance of foetid breath.
5. Discuss the importance of pruritus and as a symptom.
6. A man thirty years old has a swollen knee and frequent urination. Discuss the possible diagnoses.
7. Discuss the probable causes of persistent occipital aching.
8. Discuss the significance of general adenopathy.
9. Describe and discuss the diagnosis of luetic periostitis.
10. Discuss the diagnosis of hypopituitarism.
11. A woman sixty years of age is pale, has dyspnoea and persistent sensation of "buzzing in the head." Discuss the probable causes.
12. Discuss the diagnosis of scarlatina.

Answer ten questions only.

General Diagnosis.

H. E. ALDERSON, M. D.

10 a. m. to 12 m., July 12, 1917.)

(For 1,000 Hours Drugless Applicants Only.)

1. Describe and discuss four stigmata of hereditary syphilis.
2. Discuss the significance of a heavily-coated tongue.
3. Discuss the significance of diarrhea.
4. Discuss the diagnosis of insolation (sunstroke).
5. Discuss the differential diagnosis of mucous patches
6. Discuss the diagnosis of shock.
7. Discuss the diagnosis of iliocolitis.
8. A girl 15 years of age is pale, has dysmenorrhea, frequent dyspnoea and occasional vertigo. Discuss the probable causes.
9. Discuss the diagnosis of high blood pressure in a man 40 years of age.
10. Discuss the differential diagnosis of variola in its earliest phases.
11. A man has a hard noninflammatory tumor over the upper sternum. Discuss the possible diagnoses.
12. Describe and discuss four varieties of abdominal hernia.

Answer ten questions only.

Dermatology and Syphilis.

H. E. ALDERSON, M. D.

10 a. m. to 12 m., July 12, 1917.

(For Chiropody Applicants Only.)

1. Discuss the causes and diagnosis of papilloma of the sole.
2. Discuss the effects of applying a 1 per cent. solution of carbolic acid as a compress on the toe.
3. Describe fully two types of syphilitic lesions commonly appearing on the feet.
4. Describe the precaution necessary in caring for the nails of a patient with active syphilis.
5. Describe and discuss perforating ulcer.
6. Describe and discuss diabetic gangrene of the toe.
7. Describe melanotic sarcoma as it appears on the toe and discuss its prognosis.
8. Discuss the etiology and diagnosis of eczema of the toes.
9. Discuss the etiology and therapy of callus.
10. Discuss bromidrosis.
11. Describe a safe and efficient method of rendering the skin surgically clean.
12. Discuss the etiology and treatment of fissures between the toes.

Answer ten questions only

Chemistry and Toxicology.

H. E. ALDERSON, M. D.

1 to 3 p. m., July 12, 1917.

(For Physician and Surgeon Applicants.)

1. Discuss the physical and chemical properties of carbon.
2. Discuss cynanogen, its chemical properties, principal compounds and its toxicology.
3. Discuss briefly the source and chemical properties of glycerin.
4. What are proteins? Give examples of the most common proteid foods.
5. Discuss briefly the chemical composition of sebaceous secretion.
6. Discuss the chemical properties of arsenious acid and the effects of chronic arsenical poisoning.
7. Discuss the danger of using alcohol as an antidote for carbolic acid.
8. Discuss mercurialism.
9. Discuss plumbism.
10. Discuss the symptoms and treatment of gas poisoning as it occurs in modern warfare.
11. Discuss iodism.
12. Discuss the toxic action of urea.

Answer ten questions only.

Toxicology and Elementary Chemistry.

H. E. ALDERSON, M. D.

1 to 3 p. m., July 12, 1917.

(For Drugless Applicants Only.)

1. Define chemistry.
2. Give the chemical and commercial names of (a) $Pb(C_2H_3O_2)_2$, (b) $CuSO_4$, (c) CaH_2O_2, (d) S, (e) $NaHCO_3$.
3. What is an ion?
4. Discuss the chemical difference between sulphurous acid and sulphuric acid.
5. Discuss "supersaturated solution" and give two illustrations.
6. Define (a) acid, (b) alkali.

7. Discuss the danger of using alcohol as an antidote for carbolic acid.
8. Discuss mercurialism.
9. Discuss plumbism.
10. Discuss the symptoms and treatment of gas poisoning as it occurs in modern warfare.
11. Discuss iodism.
12. Discuss the toxic action of urea.

Answer ten questions only.

Materia Medica and Therapeutics, Pharmacology, Including Prescription Writing.

A. M. SMITH, M. D.

3:30 to 6 p. m., July 12, 1917.
(For Physician and Surgeon Applicants.)

1. Name two types of emetics, and give five examples of each. Also discuss the action of each type.
2. Outline the treatment of a case of impetigo contagiosa.
3. Discuss the treatment of angina pectoris. Discuss the treatment of epilepsy.
4. What is Young's rule for the dosage of medicine in children. Illustrate.
5. Describe in detail the treatment of a case of mucus colitis.
6. What measures would you employ in hemorrhage from a hemophilic patient?
7. What are alkaloids? What are glucosides? Illustrate.
8. Discuss the physiological action of chloral.
9. What are the physiological effects of caffeine, arsenious acid, quinine hydrobromide, potassium iodide?
10. Write prescription for the following:
    (a) Expectorant mixture.
    (b) Scabies.
    (c) Cystitis.
    (d) Acute infectious arthritis.
11. Discuss the conditions modifying the effects of drugs on the living organism.
12. Give treatment of—
    (a) Amebiasis.
    (b) Uncinariasis.
    (c) Taenia.

Answer ten questions only.

Homeopathic Materia Medica, Therapeutics, Pharmacology and Prescription Writing.

R. A. CAMPBELL, M. D.

3:30 to 6 p. m., July 12, 1917.
(For Physician and Surgeon Applicants.)

1. Name the remedy for the following:
    (a) Face pale and swollen, skin dry and rough, has great thirst and can not tolerate odor of food, burning eyes with acrid lacrimation; nasal discharge thin, watery and excoriating worse in morning.
    (b) Sharp stitching pains in chest, worse from motion, delirious with the affairs of the day; mouth dry, tongue coated, and drinks quantities of water.
2. (a) Write a prescription containing three drugs and a vehicle.
    (b) Give the symptoms of the case for which you would prescribe it.
3. Describe the headache of (a) belladonna; (b) spigelia; (c) Sanguinaria; (d) nux vomica; (e) bryonia.
4. What are the abdominal symptoms calling for (a) colocynth; (b) dioscorea; (c) nux vomica; (d) merc. corr; (e) chelidonium.
5. Name three causes of iritis. Briefly outline the treatment.
6. Give blood pressure findings upon which you would refuse an applicant life insurance and give reason for doing so.
7. Discuss the relative merits of three drugs used for local anaesthesia.
8. Name the alkaloids of opium. How do they differ in action?
9. Describe the delirium of stramonium, hyoscyamus and bryonia.
10. Discuss nux vomica therapeutically.
11. Define idiosyncrasy. Discuss one example.
12. Discuss oleum ricini physiologically and therapeutically.

Answer ten questions only.

Eclectic Materia Medica and Therapeutics, Pharmacology, Including Prescription Writing.

H. V. BROWN, M. D.

3:30 to 6 p. m., July 12, 1917.
(For Physician and Surgeon Applicants.)

1. Differentiate between sedatives and depressants. Give illustrations.
2. Give the specific symptomatology of epilobium, lycopodium, and eupatorium purpureum.
3. Give source, physiological action and therapy of cascara sagrada.
4. You are called to prescribe for a male, aged 45, abdomen prominent, ankles slightly edematous, stools constipated and slate color, appetite uncertain and some distress after meals. Write a prescription containing two drugs and a vehicle.
5. Name and describe action of two hemostatics.
6. Having a patient with highly alkaline urine with cystitis, how would you prescribe?
7. Give an efficient treatment for (a) seat worms; (b) tape worm.
8. How does salol act in the intestine? How is it eliminated?
9. Explain the physiological action of potassium iodide when taken per mouth.
10. In the absence of opium and its derivatives how would you relieve a patient suffering with gallstone colic?
11. Classify the following: Ergot, quinine, leptandrin, sodium sulphate, potassium citrate.
12. Give the indications for: black haw, matericaria, helionias.

Answer ten questions only.

NEW MEMBERS.

Asher, J. C., Anaheim.
Barry, Ernest, San Francisco.
Canney, F. G., San Francisco.
Dubois, Willard C., Santa Ana.
Hassan, D. W., Buena Park.
Helms, Geo. L., San Francisco.
Hornor, D. K., Lompoc.
Jones, Floyd Burton, Napa.
Proudfoot, C. P., San Luis Obispo.
Siefert, A. C. L., San Francisco.
Westerfeld, Otto, San Francisco.
Zieg, John, San Francisco.

TRANSFERRED.

Gambotta, C. A., from Santa Cruz to Oakland, Cal.

OBITUARY.

Edward Reinhard Maximilian Magnus.

Edward Reinhard Maximilian Magnus was born on the 23d of February, 1854, in Langsow in the Mark Brandenburg, Germany. Originating from military parentage, he was also to become a German army officer. He went through the usual educational training and when 18 years old, and about to enter actual service, emigrated to the United States. He came to California and was engaged in San Jose for several years as newspaper correspondent, bookkeeper, teacher in fencing and athletics.

In 1888 he graduated from Jefferson College, Philadelphia, and settled in San Francisco, where he lived until his death.

In 1875 he married Miss Carmen Bosque, who survives him. His son, Dr. Max Edward Magnus, died suddenly shortly after his father's demise.

Dr. Magnus was a highly public-spirited citizen, with a broad mind and big heart. He was interested in all sorts of civic, fraternal and social organizations; he tried to introduce into San Francisco schools the German system of compulsory physical training, and was for a time "director of physical culture." To Dr. Magnus we owe the arrangement of the Beethoven Festival of music, which served to introduce Alfred Hertz to San Francisco, and indirectly resulted in Hertz becoming conductor of the San Francisco Symphony, and which was the occasion to dedicate to the City of San Francisco Beethoven's monument in Golden Gate Park, a gift of the New York Arion Singing Society to San Francisco.

Dr. Magnus died March 19, 1917, in his 63d year.

H. J. K.

Andrews, Harry Alta, of San Francisco; Cooper Medical College, '91; (C) '92; died August 22, 1917, of chronic endocarditis, aged 48.

Bowerman, Albert Claude, M. D., Strathmore, Cal.; University of Toronto, Ont., 1876; aged 67; formerly a Fellow of the American Medical Association; died at his home, May 28, 1917, from cerebral hemorrhage.

Woelffel, George A., of Willits, Cal.; Coll. Phys. & Surg., Keokuk, Iowa; died at the German Hospital, San Francisco, on August 21, 1917.